139. MORACEAE

139.1.1 **Antiaris toxicaria** Lesch., **FMP3** 351, **TFM3** 120; tree to 45 m tall; lowland forest; widespread.

139.2.1 **Artocarpus anisophyllus** Miq., **J07** 138, **TFM3** 123; *Artocarpus superbus* Becc., **FMP3** 356; pinnate-leaved tree to 45 m tall; lowland forest; NS, Ml, Jh, Sp.

139.2.2 **Artocarpus dadah** Miq., **J08** 91, **TFM3** 124; *Artocarpus lakoocha auct. non* Roxb., **FMP3** 355; tree to 24 m tall; lowland and hill forest; throughout.

139.2.3 **Artocarpus elasticus** Reinw. *ex* Blume, **J07** 346, **TFM3** 124; *Artocarpus kunstleri* King, **FMP3** 353; tree to 45 m tall; lowland forests and open country; common throughout.

139.2.4 **Artocarpus fulvicortex** F.M. Jarrett, **J08** 116, **TFM3** 126; tree to 30 m tall; lowland forest; Pk, Ph, NS, Ml, Sp.

139.2.5 **Artocarpus glaucus** Blume, **J08** 118, **TFM3** 126; *Artocarpus denisonianus* King, **FMP3** 355; tree to 40 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, Jh.

139.2.6 **Artocarpus gomezianus** Wall. *ex* Trécul, **J08** 88, **TFM3** 126; tree to 42 m tall; lowland forest; Kd, Kl, Ph, NS, Jh, Sp.

139.2.7 **Artocarpus hispidus** F.M. Jarrett, **J07** 331, **TFM3** 127; tree to 20 m tall; lowland forest; Pn, Tg, Pk, Ph, Sl, Ml, Sp; endemic.

139.2.8 **Artocarpus integer** (Thunb.) Merr. var. **silvestris** Corner, **J07** 331, **TFM3** 129; *Artocarpus polyphema* Pers., **FMP3** 354; tree to 24 m tall, the wild chempedak (var. *integer* being the cultivated tree); lowland to montane forest; widespread.

139.2.9 **Artocarpus kemando** Miq., **FMP5** 335, **J07** 354, **TFM3** 129; tree to 40 m tall; swampy lowland forest; Tg, Ph, Sl, Jh, Sp.

139.2.10 **Artocarpus lanceifolius** Roxb., **FMP3** 354, **J07** 140, **TFM3** 129; tree to 36 m tall; lowland and hill forest; widespread.

139.2.11 **Artocarpus lowii** King, **FMP3** 353, **J07** 339, **TFM3** 131; tree to 25 m tall; lowland forest; widespread but uncommon.

139.2.12 **Artocarpus maingayi** King, **FMP3** 354, **J07** 357, **TFM3** 131; tree to 30 m tall; lowland forest, especially swamps; throughout.

139.2.13 **Artocarpus nitidus** Trécul ssp. **griffithii** (King) F.M. Jarrett, **J08** 128, **TFM3** 131; *Artocarpus gomezianus auct. non* Trécul, **FMP3** 355; tree to 30 m tall; lowland forest; throughout.

139.2.14 **Artocarpus rigidus** Blume, **FMP3** 352, **J07** 150, **TFM3** 131; tree to 45 m tall; lowland and hill forest; throughout.

139.2.15 **Artocarpus scortechinii** King, **FMP3** 355, **J07** 344, **TFM3** 134; tree to 45 m tall; lowland forest; widespread.

139.2.16 **Artocarpus teysmannii** Miq., **J07** 341, **TFM3** 134; *Artocarpus peduncularis* Kurz, **FMP3** 353; tree to 45 m tall; lowland swamps; Pk, Sl.

139.2.17 **Artocarpus sp.** A, **TFM3** 134; tree to 24 m tall; hill forest; once from Gg Tampin, NS; ?endemic.

139.2.18 **Artocarpus sp.** B, **TFM3** 134; tree to 15 m tall; lowland forest; once from Gg Ledang, Jh; ?endemic.

139.3.1 **Bleekrodea malayana** (Corner) C.C. Berg, **B19** 359; *Streblus malayanus* Corner, **C30** 11; small tree; limestone; Gua Musang, Kl; endemic.

139.4.1 **Ficus albipila** (Miq.) King, **TFM3** 139; tall tree; lowlands; scattered.

139.4.2 **Ficus allutacea** Blume, **FMP3** 344, **TFM3** 139; epiphytic shrub to 12 m tall; lowland forest; Pk.

139.4.3 **Ficus annulata** Blume, **FMP3** 333, **TFM3** 140; strangler to 24 m tall; lowland forest; widespread, commoner in the north.

139.4.4 **Ficus apiocarpa** Miq., **FMP3** 338, **TFM3** 140; climber; swampy lowland forest; Tg, Sl, Jh, Sp.

139.4.5 **Ficus araneosa** King, **FMP3** 345, **TFM3** 140; slender climber; lowland forest; Pk, Sl.

139.4.6a **Ficus aurantiacea** Griff. var. **angustifolia** Corner, **TFM3** 140; climber; montane forest; Main Range.

139.4.6b **Ficus aurantiacea** Griff. var. **aurantiacea**, **FMP3** 338, **TFM3** 140; *Ficus callicarpa* Miq., **FMP3** 338; climber; lowland forest; widespread.

139.4.7a **Ficus aurata** Miq. var. **aurata**, **TFM3** 140; *Ficus chrysocarpa* Reinw. *ex* Blume, **FMP3** 348; shrub or small tree to 9 m tall; secondary forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

139.4.7b **Ficus aurata** Miq. var. **longipilosa** Corner, **TFM3** 141; shrub; lowland and hill forest; Pk to Sp.

139.4.7c **Ficus aurata** Miq. var. **pedunculata** Corner, **TFM3** 141; shrub; lowland and hill forest; Tg, Pk, Sl; endemic variety.

139.4.8 **Ficus beccarii** King, **TFM3** 141; shrubby earth-fig to 5 m tall; near rocky streams; Tg to Jh.

139.4.9 **Ficus benjamina** L., **FMP3** 336, **TFM3** 141; large strangler; lowland forests and on roadside trees; throughout.

139.4.10a **Ficus binnendykii** Miq. var. **binnendykii**, **FMP3** 336, **TFM3** 141; strangler; lowland forest; Pk, Ph, NS, Jh.

139.4.10b **Ficus binnendykii** Miq. var. **coriacea** Corner, **TFM3** 141; strangler; lowland forest; Pk, Ml, Sp.

139.4.11 **Ficus bracteata** Wall. *ex* Miq., **FMP3** 331, **TFM3** 141; strangler; lowland forest; Pk, Sl, Jh, Sp.

139.4.12 **Ficus calcicola** Corner, **TFM3** 142, **C14** 183; shrub or small tree to 8 m tall, sometime epiphytic; limestone hills; Pk, Ph, Sl.

139.4.13 **Ficus callophylla** Blume, **TFM3** 142; scrambler; Kl, Tg.

139.4.14 **Ficus callosa** Willd., **TFM3** 142; tree to 33 m tall; lowland forest, often near the sea; Malaya north of Kuala Lumpur.

139.4.15 **Ficus caulocarpa** Miq., **TFM3** 142; strangler with many aerial roots; widespread.

139.4.16 **Ficus chartacea** Wall. *ex* King, **FMP3** 350, **TFM3** 142; shrub or small tree to 9 m tall; lowland to montane forest; throughout.

139.4.17 **Ficus concinna** Miq., **TFM3** 144; strangler; Ph.

139.4.18 **Ficus consociata** Blume var. **murtoni** King, **FMP3** 331, **TFM3** 144; strangler; lowland forests and seashores; throughout.

139.4.19 **Ficus crassiramea** Miq., **TFM3** 144; *Ficus procera* Blume, **FMP3** 332; big strangler; lowland forest; throughout.

139.4.20 **Ficus cucurbitina** King, **TFM3** 144; scrambler; usually near the sea; Ph, Jh.

139.4.21 **Ficus curtipes** Corner, **TFM3** 144; *Ficus obtusifolia* (*non* H.B.K.) Roxb., **FMP3** 335; scrambler; lowland forest; P. Langkawi, Pn.

139.4.22 **Ficus delosyce** Corner, **TFM3** 144; tall strangler; lowland forest; Tg, Pk, Sl, NS, Jh, Sp.

139.4.23a **Ficus deltoidea** Jack var. **angustifolia** (Miq.) Corner, **C29** 300, **TFM3** 145; *Ficus diversifolia* Blume var. *ovoidea* Jack, **FMP3** 346; shrub to 4 m tall, sometimes epiphytic; lowland and montane forest, common on seashores; widespread.

139.4.23b **Ficus deltoidea** Jack var. **bilobata** Corner, **C29** 303, **TFM3** 145; shrub to 5 m tall; ridge forest at 1000–2000 m, also on limestone; Kd to Ph and Sl, endemic variety.

139.4.23c **Ficus deltoidea** Jack var. **deltoidea**, **C29** 300, **TFM3** 145; *Ficus diversifolia* Blume var. *deltoidea* (Jack) Ridl., **FMP3** 346; shrub to 2 m tall, often epiphytic; seashores to mountain tops.

139.4.23d **Ficus deltoidea** Jack var. **intermedia** Corner, **C29** 304, **TFM3** 145; *Ficus burkillii* Ridl., **FMP3** 330; *Ficus diversifolia* Blume var. *lutescens auct. non* (Desf.) King, **FMP3** 346; shrub to 4 m tall, sometimes epiphytic; montane forest.

139.4.23e **Ficus deltoidea** Jack var. **kunstleri** (King) Corner, **C29** 306, **TFM3** 145; *Ficus diversifolia* Blume var. *kunstleri* King, **FMP3** 346; epiphytic shrub; lowland and montane forest; Jh northward.

139.4.23f **Ficus deltoidea** Jack var. **motleyana** (Miq.) Corner, **C29** 308, **TFM3** 145; *Ficus motleyana* Miq., **FMP5** 334; shrub to 6 m tall; montane forest; Gg Tapis, Ph.

139.4.23g **Ficus deltoidea** Jack var. **trengganuensis** Corner, **C29** 310, **TFM3** 145; shrub to 2 m tall, sometimes epiphytic; coastal areas, lowland and montane forest; endemic variety.

139.4.24 **Ficus depressa** Blume, **TFM3** 145; *Ficus pruniformis* Blume, **FMP3** 333; strangler; lowland forest; Kl, Pk, Ph, Sl.

139.4.25 **Ficus disticha** Blume, **TFM3** 145; strangler; montane forest; Tg, Ph.

139.4.26 **Ficus drupacea** Thunb., **TFM3** 145; *Ficus pilosa* Reinw. *ex* Blume, **FMP3** 331; big tree; lowland and hill forest; north of Malaya.

139.4.27 **Ficus dubia** Wall. *ex* King, **FMP3** 333, **TFM3** 146; large scrambler or strangler; lowland forest; scattered throughout.

139.4.28 **Ficus elastica** Roxb. *ex* Hornem., **FMP3** 334, **TFM3** 146; large strangler; lowlands; north Malaya, cultivated elsewhere.

139.4.29 **Ficus excavata** King, **FMP3** 344, **TFM3** 146; epiphytic climber; lowlands; Tg and Pk to Sp.

139.4.30a **Ficus fistulosa** Reinw. *ex* Blume var. **fistulosa**, **FMP3** 343, **TFM3** 146; weedy tree to 15 m tall; secondary forest, waysides; common throughout.

139.4.30b **Ficus fistulosa** Reinw. *ex* Blume var. **tengerensis** (Miq.) Kuntze, **TFM3** 147; shrub or small tree; hills and mountains; widespread.

139.4.31a **Ficus forstenii** Miq. var. **pacifica** (Elmer) Corner, **TFM3** 147; strangler; lowland forest; once from Larut, Pk.

139.4.31b **Ficus forstenii** Miq. var. **villosa** Corner, **TFM3** 147; strangler; lowland forest; once from Kroh, Ph.

139.4.32 **Ficus fulva** Reinw. *ex* Blume, **FMP3** 347, **TFM3** 147; *Ficus chrysocarpa* Reinw. *ex* Blume, **FMP3** 348; *Ficus patens* Ridl., **FMP3** 348; small tree to 18 m tall; secondary forests in the lowlands and hills; Ml northwards.

139.4.33 **Ficus glandulifera** (Wall. *ex* Miq.) King, **FMP3** 347, **TFM3** 147; tree to 15 m tall; lowland forest; Ps, Kd, Pn, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

139.4.34 **Ficus globosa** Blume, **FMP3** 333, **TFM3** 147; scrambler; sea coasts to mountains; Pk and Ph southward.

139.4.35a **Ficus grossularioides** Burm.*f.* var. **grossularioides**, **TFM3** 148; *Ficus alba* Reinw. *ex* Blume, **FMP3** 347; shrub to 9 m tall; secondary forest; common throughout.

139.4.35b **Ficus grossularioides** Burm.*f.* var. **robusta** Corner, **TFM3** 148; shrub to 9 m tall; montane forest at 1200 m; Fraser's Hill, Ph.

139.4.36 **Ficus heterophylla** L.*f.*, **FMP3** 339, **TFM3** 148; shrub to 6 m tall; sandy river banks; NS northward.

139.4.37 **Ficus heteropleura** Blume, **TFM3** 148; *Ficus urophylla* Wall., **FMP3** 330; epiphytic shrub; lowland to montane forest; common throughout.

139.4.38a **Ficus hirta** Vahl var. **hirta**, **TFM3** 148; small tree to 9 m tall; montane forest; Main Range.

139.4.38b **Ficus hirta** Vahl var. **malayana** Corner, **TFM3** 148; small tree to 9 m tall; montane forest; Pk, Ph.

139.4.39 **Ficus hispida** L.*f.*, **FMP3** 342, **TFM3** 149; tree to 12 m tall; lowland forest; Sl northward.

139.4.40 **Ficus ischnopoda** Miq., **TFM3** 149; *Ficus pyriformis* Hook. & Arn., **FMP3** 349 incl. var. *angustifolia* Ridl.; narrow-leaved shrub to 5 m tall; in and near rocky streams; Central and North Malaya.

139.4.41 **Ficus kerkhovenii** Valeton, **TFM3** 149; large strangler to 36 m tall; lowland and montane forest; Kd, Ph, Jh, Sp.

139.4.42 **Ficus kurzii** King, **TFM3** 149; scrambler; rocks near the sea; P. Tioman and islands nearby.

139.4.43a **Ficus laevis** Blume var. **laevis**, **FMP3** 344, **TFM3** 149; small tree or epiphyte; lowlands; Ps, Pn, Pk, Ph, Sl, Sp.

139.4.43b **Ficus laevis** Blume var. **tomentosa** King, **FMP3** 344, **TFM3** 149; small tree or epiphyte; lowlands; Tg.

139.4.44 **Ficus lamponga** Miq., **TFM3** 150; *Ficus lepidosa* Wall. *ex* Kurz, **FMP3** 350; tree to 24 m tall; lowland and hill forest; Pk, Sl, Jh, Sp.

139.4.45 **Ficus lepicarpa** Blume, **FMP3** 343, **TFM3** 150; tree to 12 m tall; lowland to montane forest, usually near streams; widespread.

139.4.46 **Ficus litseifolia** Corner, **FMP3** 150; small tree to 8 m tall; montane forest; Gg Padang, Tg.

139.4.47 **Ficus lowii** King, **FMP3** 332, **TFM3** 150; climber; hill forest; Pk, Ph.

139.4.48 **Ficus maclellandii** King, **TFM3** 150; strangler; lowland forest; Kd.

139.4.49 **Ficus madurensis** Miq., **TFM3** 151; *Ficus copiosa* Steud., **FMP3** 340; small tree; lowland and montane forest; Ml northwards.

139.4.50 **Ficus magnoliifolia** Blume, **TFM3** 151; tree to 33 m tall; lowland forest; Sl northward.

139.4.51 **Ficus microcarpa** L.*f.*, **TFM3** 151; *Ficus retusa auct. non* L., **FMP3** 335; large tree with aerial roots; swampy places; common and widespread.

139.4.52 **Ficus microsyce** Ridl., **FMP3** 335, **TFM3** 151; strangler to 36 m tall; lowlands; Tg, Ph, Sl, Jh, Sp.

139.4.53 **Ficus mollissima** Ridl., **FMP3** 348, **TFM3** 151; tree to 12 m tall; lowland forest; Kd, NS; endemic.

139.4.54 **Ficus montana** Burm.*f.*, **TFM3** 151; *Ficus quercifolia* Roxb., **FMP3** 339 incl. var. *inconstans* (Miq.) Ridl.; shrub or creeper; by rocky streams; Ml northward.

139.4.55 **Ficus obpyramidata** King, **FMP3** 343, **TFM3** 152; tree to 9 m tall; by rivers of lowlands and hills to 1200 m; throughout.

139.4.56a **Ficus obscura** Blume var. **borneensis** (Miq.) Corner, **TFM3** 152; *Ficus obscura* Blume, **FMP3** 339; *Ficus pisifera* Wall. *ex* Miq., **FMP3** 329; epiphyte or strangler; lowland forest; common throughout.

139.4.56b **Ficus obscura** Blume var. **kunstleri** (King) Corner, **TFM3** 152; *Ficus celebica* Blume var. *kunstleri* King, **FMP3** 330; epiphyte or strangler; montane forest; Kd, Pk.

139.4.57 **Ficus oligodon** Miq., **TFM3** 152; *Ficus pomifera* Wall. *ex* King, **FMP3** 350; tree to 12 m tall; by lowland and mountain streams; north of Malaya.

139.4.58 **Ficus oreophila** Ridl., **FMP3** 348, **TFM3** 152; shrub or small tree to 9 m tall; montane forest above 1000 m; Kl, Pk, Ph; endemic.

139.4.59 **Ficus parietalis** Blume, **FMP3** 330, **TFM3** 153; climber or epiphytic shrub; lowland forest; widespread.

139.4.60 **Ficus pellucidopunctata** Griff., **TFM3** 153; *Ficus indica* L. var. *gelderi* (Miq.) King, **FMP3** 334; strangling fig to 24 m tall; lowland forest; widespread.

139.4.61 **Ficus pendens** Corner, **TFM3** 153; slender climber; montane forest; Pn, Pk, Ph, Jh.

139.4.62 **Ficus pisocarpa** Blume, **FMP3** 336, **TFM3** 153; *Ficus microstoma* Wall. *ex* King, **FMP3** 334; tree to 18 m tall; lowland forest near streams: Pk, Ph, Sl, NS, Ml, Sp.

139.4.63 **Ficus punctata** Thunb., **FMP3** 338, **TFM3** 154; large creeper; on tree trunks in open country; widespread.

139.4.64 **Ficus pubigera** (Wall. *ex* Miq.) Miq., **TFM3** 153; climber; once from Ph.

139.4.65a **Ficus pubilimba** Merr. var. **pubilimba**, **TFM3** 153; big strangler; lowlands; Pk and Pn northwards.

139.4.65b **Ficus pubilimba** Merr. var. **ovata** Corner, **TFM3** 154; strangler; once from Pn; endemic variety.

139.4.66 **Ficus racemosa** L., **TFM3** 154; tree to 24 m tall; by rivers; north of Malaya.

139.4.67a **Ficus recurva** Blume var. **bridelioides** Corner, **FMP3** 345 in part, **TFM3** 154; epiphyte and rock climber; lowlands; Tg, Pk, Jh.

139.4.67b **Ficus recurva** Blume var. **elegantior** Corner, **FMP3** 345 in part, **TFM3** 154; epiphyte and rock climber; lowlands; Tg.

139.4.67c **Ficus recurva** Blume var. **ribesioides** King, **FMP3** 345 in part, **TFM3** 154; climber; Pk, Sp.

139.4.68 **Ficus religiosa** L., **FMP3** 337; large tree; around towns, widely planted; naturalized from India.

139.4.69 **Ficus retusa** L., **TFM3** 154; *Ficus truncata* Miq., **FMP3** 335; tree to 18 m tall; by rivers; Pk, Ph, Sl, Jh.

139.4.70 **Ficus ribes** Reinw. *ex* Blume, **TFM3** 155; *Ficus staphylosyce* Ridl., **FMP5** 334; small tree to 8 m tall; montane forest; NS northward.

139.4.71 **Ficus ruginervia** Corner, **TFM3** 155; climber; lowland forest; Jh, Sp.

139.4.72 **Ficus rumphii** Blume, **FMP3** 337, **TFM3** 155; large tree or strangler; rocky coasts; Ps, P. langkawi.

139.4.73 **Ficus sagittata** Vahl, **TFM3** 155; *Ficus ramentacea* Roxb., **FMP3** 345; climber; lowland forest; common throughout.

139.4.74 **Ficus schwarzii** Koord., **TFM3** 155; *Ficus miquelii* Hook.*f*., **FMP3** 341; small tree to 12 m tall; lowland and hill forest to 1200 m; widespread.

139.4.75 **Ficus scortechinii** King, **FMP3** 343, **TFM3** 156; *Ficus fasciculata* Hook.*f*., **FMP3** 343; tree to 5 m tall; lowland forest; common throughout.

139.4.76 **Ficus semicordata** Buch.-Ham. *ex* Sm., **TFM3** 156; *Ficus cunia* Buch.-Ham. *ex* Roxb., **FMP3** 341; earth-fig tree to 12 m tall; secondary forest, often near streams; north of Malaya.

139.4.77a **Ficus sinuata** Thunb. ssp. **cuspidata** (Reinw.) Corner, **TFM3** 156; *Ficus cuspidata* Rienw., **FMP3** 340; small tree; montane forest; widespread.

139.4.77b **Ficus sinuata** Thunb. ssp. **sinuata** var. **oblonga** Corner, **TFM3** 156; small tree; lowlands; Pk, Jh.

139.4.77c **Ficus sinuata** Thunb. ssp. **sinuata** var. **sinuata**, **TFM3** 156; *Ficus rostrata* Lam., **FMP3** 340; epiphyte or small tree; lowlands to mountains; common throughout.

139.4.78 **Ficus spathulifolia** Corner, **TFM3** 156; epiphytic tree; peat swamp forest; Sl.

139.4.79 **Ficus stricta** Miq., **TFM3** 157; tree to 18 m tall; lowland forest; Kd, Pk.

139.4.80a **Ficus stupenda** Miq. var. **minor** Corner, **TFM3** 157; strangler; lowland forest; Jh, Sp.

139.4.80b **Ficus stupenda** Miq. var. **stupenda**, **TFM3** 157; strangler to 30 m tall; hill and montane forest; Tg, Pk, Sl.

139.4.81 **Ficus subcordata** Blume var. **malayana** Corner, **TFM3** 157; strangler; hill forest at 600 m; once from near Fraser's Hill, Ph.

139.4.82a **Ficus subgelderi** Corner var. **rigida** (Miq.) Corner, **TFM3** 157; *Ficus rigida* Miq., **FMP3** 332; strangler; lowland forest; Pn, Pk, Ph, Jh, Sp.

139.4.82b **Ficus subgelderi** Corner var. **subgelderi**, **TFM3** 157; strangler; lowland forest; Pk to Sp.

139.4.83 **Ficus subtecta** Corner, **TFM3** 158; big strangler; lower montane forest at 1200 m; Cameron Highlands, Ph.

139.4.84 **Ficus subulata** Blume, **FMP3** 329; large climber; lowland and hill forest; widespread.

139.4.85a **Ficus sumatrana** Miq. var. **circumscissa** Corner, **TFM3** 158 '*circumissa*'; *Ficus acamptophylla* Miq., **FMP3** 335; tree; Tg, Pk, Jh; endemic variety.

139.4.85b **Ficus sumatrana** Miq. var. **microsyce** Corner, **TFM3** 158; tree; Pk, Jh.

139.4.85c **Ficus sumatrana** Miq. var. **sumatrana**, **TFM3** 158; tree, epiphytic when young; lowland forest; Pk, Sl, NS.

139.4.86a **Ficus sundaica** Blume var. **beccariana** (King) Corner, **TFM3** 158; big tree; lowland forest; Kd, Tg, Ph.

139.4.86b **Ficus sundaica** Blume var. **sundaica**. **TFM3** 158; *Ficus indica auct. non* L., **FMP3** 334; big stilt-rooted tree; lowland forest; common throughout.

139.4.87 **Ficus superba** (Miq.) Miq., **TFM3** 159; big tree; rocky coasts; common throughout.

139.4.88 **Ficus tinctoria** G. Forst. ssp. **gibbosa** (Blume) Corner, **TFM3** 159; *Ficus gibbosa* Blume, **FMP3** 329; big tree with many aerial roots; lowlands, often on rocky coasts; NS northwards.

139.4.89 **Ficus trichocarpa** Blume, **TFM3** 159; *Ficus obtusa* Hassk., **FMP3** 344; climber; lowland and hill forest; Pn, Pk, Ph, Sl.

139.4.90 **Ficus tricolor** Miq., **TFM3** 159; tree to 18 m tall; montane forest; Tg, Ph.

139.4.91 **Ficus tristaniifolia** Corner, **TFM3** 159; strangler; peat swamp forest; Ml, Jh.

139.4.92 **Ficus uncinata** (King) Becc. var. **strigosa** Corner, **TFM3** 160; earth-fig tree to 10 m tall; lowland forest margins; widespread.

139.4.93 **Ficus uncinulata** Corner, **TFM3** 160; climber; lowland forest; Jh.

139.4.94 **Ficus uniglandulosa** Wall. *ex* Miq., **TFM3** 160; small tree, sometimes epiphytic; lowlands; widespread.

139.4.95 **Ficus urnigera** Miq., **TFM3** 160; climber; swampy lowland forest; Ph, Jh.

139.4.96 **Ficus variegata** Blume, **FMP5** 335, **TFM3** 160; *Ficus polysyce* Ridl., **FMP3** 342; tree to 33 m tall; open country, forest margins; common throughout.

139.4.97 **Ficus vasculosa** Wall. *ex* Miq., **FMP3** 337, **TFM3** 160; tree to 45 m tall; lowland forest; common throughout.

139.4.98a **Ficus villosa** Blume var. **tonsa** Corner, **FMP3** 345, **TFM3** 161; climber; montane forest at 1300 m; Cameron Highlands, Ph; ?endemic variety.

139.4.98b **Ficus villosa** Blume var. **villosa**, **FMP3** 345, **TFM3** 161; climber; lowlands; common throughout.

139.4.99a **Ficus virens** Aiton var. **glabella** (Blume) Corner, **TFM3** 161; *Ficus infectoria* Miq., **FMP3** 337; *Ficus glabella* Blume, **FMP3** 336; big tree; lowland and hill forest; common throughout.

139.4.99b **Ficus virens** Aiton var. **sublanceolata** (Miq.) Corner, **TFM3** 161; tree; rare.

139.4.99c **Ficus virens** Aiton var. **virens**, **TFM3** 161; *Ficus infectoria* Miq., **FMP3** 337; tree; lowlands; P. Langkawi.

139.4.100 **Ficus viridicarpa** Corner, **TFM3** 161; tall tree; lowland forests and open country; Kl, Tg, Ph, NS.

139.4.101 **Ficus vrieseana** Miq. var. **chamaecarpa** (Ridl.) Corner, **TFM3** 162; small earth-fig tree; forest margins; widespread.

139.4.102 **Ficus xylophylla** Wall. *ex* Miq., **FMP3** 332, **TFM3** 162; strangler; lowland and hill forest; frequent throughout.

139.5.1 **Hullettia dumosa** King, **FMP3** 358, **J09** 337, **TFM3** 162; shrub or small tree to 10 m tall; forest from lowlands to mountains at 2000 m; widespread.

139.6.1 **Maclura amboinensis** Blume; **C28** 239, **TFM3** 120; spiny climber; hill and montane forest; Pk, Ph.

139.6.2 **Maclura cochinchinensis** (Lour.) Corner; **C28** 239; *Cudrania javensis* Trécul, **FMP3** 356; small tree; mostly on limestone; Ps, Kd, Pn.

139.7.1 **Parartocarpus bracteatus** (King) Becc., **J09** 324, **TFM3** 164; *Artocarpus bracteatus* King, **FMP3** 352; tree to 45 m tall; lowland forest to 600 m; Pn, Sl, NS, Ml, Jh, Sp.

139.7.2a **Parartocarpus venenosus** (Zoll & Moritzi) Becc. ssp. **forbesii** (King) F.M. Jarrett, **J09** 333, **TFM3** 165; *Artocarpus forbesii* King, **FMP3** 352; tree to 40 m tall; lowland and hill forest to 900 m; Pn, Kl, Tg, Pk, Sl, Jh, Sp.

139.7.2b **Parartocarpus venenosus** (Zoll & Moritzi) Becc. ssp. **venenosus**, **J09** 328, **TFM3** 165; tree to 40 m tall; lowland forest; north of Malaya.

139.8.1a **Prainea limpato** (Miq.) Beumée *ex* K. Heyne var. **limpato**, **J06** 34, **TFM3** 167; tree to 18 m tall; lowland forest; once from Baling, Kd.

139.8.1b **Prainea limpato** (Miq.) Beumée *ex* K. Heyne var. **longipedunculata** Kochummen, **TFM3** 167; tree to 18 m tall; hill forest; once from Ulu Gombak, Sl; endemic variety.

139.8.2 **Prainea scandens** King, **FMP3** 358, **J06** 32; liana; lowland forest; Pk, Sl; endemic.

139.9.1 **Streblus asper** Lour., **FMP3** 323, **TFM3** 168; tree to 10 m tall; open country including limestone; north of Malaya.

139.9.2 **Streblus elongatus** (Miq.) Corner, **TFM3** 168; *Sloetia sideroxylon* Teijsm. & Binn. *ex* Kurz, **FMP3** 324; tree to 33 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Jh, Sp.

139.9.3 **Streblus glaber** (Merr.) Corner, **TFM3** 168; *Pseudostreblus caudatus* Ridl., **FMP3** 324; shrub; montane forest above 1000 m; Pk, Ph, Sl.

139.9.4 **Streblus ilicifolius** (Vidal) Corner, **TFM3** 167; *Taxotrophis ilicifolia* Vidal, **FMP3** 322; small spiny tree; limestone and other rocky habitats; widespread.

139.9.5 **Streblus laxiflorus** (Hutch.) Corner, **TFM3** 167; small spiny tree; lowlands including limestone; north of Malaya.

139.9.6 **Streblus macrophyllus** Blume, **TFM3** 168; small tree; lowlands.

139.9.7 **Streblus perakensis** Corner, **TFM3** 168; small tree; lowlands; Pk, Ph; endemic.

139.9.8 **Streblus taxoides** (K. Heyne) Kurz, **TFM3** 167; *Phyllochlamys wallichii* King, **FMP3** 322; *Phyllochlamys spinosa* (Roxb.) Bureau, **FMP3** 323; spiny tree to 10 m tall; lowlands, hills, also on limestone; widespread.

139.10.1 **Trophis scandens** (Lour.) Hook. & Arn., **B19** 354; *Malaisia torulosa* Blanco, **FMP3** 325, **TFM3** 120; *Malaisia scandens* (Lour.) Planch., **C14** 185; spiny scandent shrub; lowlands; Tg.

140. MYRICACEAE

140.1.1 **Myrica esculenta** Buch.-Ham., **FM14** 278, **TFM2** 295; *Myrica farquhariana* Wall., **FMP3** 370; *Myrica auriculata* (Gamble) Ridl., **FMP3** 371; tree to 15 m tall; lowland forest, particularly secondary forest on poor soil, mountain tops; widespread, commoner in the south.

141. MYRISTICACEAE

141.1.1 **Endocomia canarioides** (King) W.J. de Wilde, **D13** 190; *Horsfieldia canarioides* (King) Warb., **FMP3** 55; *Horsfieldia racemosa* (King) Warb., **FMP3** 60; *Embelia ridleyi* King & Gamble, **FMP2** 234; *Horsfieldia macrocoma* (Miq.) Warb. var. *canarioides* (King) J. Sinclair, **TFM1** 327; tree to 35 m tall; lowland forest; Pn, Pk, Ph, Sl, Ml, Jh, Sp.

141.2.1 **Gymnancranthera bancana** (Miq.) J. Sinclair, **TFM1** 319, **S10** 463; *Gymnacranthera murtonii* (Hook.*f.*) Warb., **FMP3** 61; tree to 40 m tall; lowland forest; ?Ph, Jh, Sp.

141.2.2a **Gymnacranthera farquhariana** (Hook.*f.* & Thomson) Warb. var. **eugeniifolia** (A. DC.) R.T.A. Schouten, **S10** 480; *Gymnacranthera farquhariana auct. non* (Hook.*f.* & Thomson) Warb., **FMP3** 62 in part; *Gymnacranthera eugeniifolia* (A. DC.) J. Sinclair var. *eugeniifolia*, **TFM1** 320 in part; tree to 30 m tall; lowland and hill forest to 1300 m; P. Langkawi, Kd, Pn, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

141.2.2b **Gymnacranthera farquhariana** (Hook.*f.* & Thomson) Warb. var. **farquhariana**, **S10** 477; *Gymnacranthera farquhariana* (Hook.*f.* & Thomson) Warb. var. *griffithii* (Hook.*f.*) Warb., **FMP3** 62; *Gymnacranthera eugeniifolia* (A. DC.) J. Sinclair var. *eugeniifolia*, **TFM1** 320 in part; tree to 30 m tall; lowland and hill forest to 900 m; Pn, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

141.2.2c **Gymnacranthera farquhariana** (Hook.*f.* & Thomson) Warb. var. **zippeliana** (Miq.) R.T.A. Schouten, **S10** 482; *Gymnacranthera farquhariana auct. non* (Hook.*f.* & Thomson) Warb., **FMP3** 62 in part; *Gymnacranthera eugeniifolia* (A. DC.) J. Sinclair var. *griffithii* (Hook.*f.*) J. Sinclair, **TFM1** 320; ?*Gymnacranthera contracta auct. non* Warb., **TFM1** 320; tree to 30 m tall; swampy lowland forest; Pk, Ph, Sl, Jh, Sp.

141.2.3 **Gymnacranthera forbesii** (King) Warb., **FMP3** 61, **TFM1** 320, **S10** 472; tree to 35 m tall; lowland forest; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

141.3.1 **Horsfieldia brachiata** (King) Warb., **FMP3** 59, **TFM1** 325, **D16** 3; tree to 35 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Ml, Jh.

141.3.2 **Horsfieldia crassifolia** (Hook.*f.* & Thomson) Warb., **FMP3** 59, **TFM1** 324, **D15** 219; tree to 25 m tall; swampy lowland forest; Tg, Pk, Sl, NS, Ml, Jh, Sp.

141.3.3 **Horsfieldia elongata** W.J. de Wilde, **D17** 465; tree about 8 m tall; lower montain forest at 1300 m; only known form type, Fraser's Hill, Ph; endemic.

141.3.4 **Horsfieldia flocculosa** (King) Warb., **FMP3** 55, **TFM1** 324, **D15** 207; tree to 28 m tall; lowland forest; Ph, NS, Sl, Jh; endemic.

141.3.5 **Horsfieldia fulva** (King) Warb., **FMP3** 56, **TFM1** 326, **D15** 199; tree to 20 m tall; lowland forest; Pk, Sl, NS, Ml.

141.3.6 **Horsfieldia grandis** (Hook.*f.*) Warb., **FMP3** 56, **TFM1** 323, **D15** 203; tree to 25 m tall; lowland forest; Ph, Jh, Sp.

141.3.7 **Horsfieldia irya** (Gaertn.) Warb., **TFM1** 326, **D14** 55; *Horsfieldia lemanniana* (A. DC.) Warb., **FMP3** 59; tree to 25 m tall; damp lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

141.3.8 **Horsfieldia macilenta** W.J. de Wilde, **D16** 13; tree to 17 m tall; lowland forest; Kl, Jh.

141.3.9 **Horsfieldia majuscula** (King) Warb., **FMP3** 57, **D16** 48; tree to 25 m tall; lowland and hill forest; Kl, Pk, Ph.

141.3.10 **Horsfieldia parviflora** (Roxb.) J. Sinclair, **D14** 69; *Horsfieldia globularia* (Blume) Warb., **FMP3** 54; tree to 20 m tall; lowland forest; established in the Botanic Gardens' Jungle, Sp; introduced from the Moluccas.

141.3.11 **Horsfieldia penangiana** J. Sinclair, **TFM1** 324, **D16** 52; tree to 25 m tall; hill and lower montane forest; Pn, Ph, Sl.

141.3.12a **Horsfieldia polyspherula** (Hook.*f.*) J. Sinclair var. **polyspherula**, **TFM1** 325, **D16** 19; tree to 35 m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

141.3.12b **Horsfieldia polyspherula** (Hook.*f.*) J. Sinclair var. **sumatrana** (Miq.) W.J. de Wilde, **D16** 20; *Horsfieldia subglobosa auct. non* (Miq.) Warb., **FMP1** 60; *Horsfieldia brachiata* (King) Warb. var. *sumatrana* (Miq.) J. Sinclair *ex* Whitmore, *nom. inval.*, **TFM1** 325; tree to 35 m tall; lowland forest; Kd, Kl, Pk, Ph, Sl, NS, Jh, Sp.

141.3.13 **Horsfieldia pulcherrima** W.J. de Wilde, **D15** 206; tree to 27 m tall; swampy lowland forest; Ph, Jh.

141.3.14 **Horsfieldia punctata** W.J. de Wilde, **D16** 37; tree to 25 m tall; lower montane forest at about 1000 m; Ph; endemic.

141.3.15 **Horsfieldia punctatifolia** J. Sinclair, **TFM1** 327, **D16** 54; tree to 30 m tall; lowland and hill forest; Pk, Sl, NS, Ml, Sp.

141.3.16 **Horsfieldia ridleyana** (King) Warb., **FMP3** 60, **TFM1** 324, **D16** 7; tree to 25 m tall; lowland forest on poor soils; Kl, Tg, Pk, Ph, Sl, Ml.

141.3.17 **Horsfieldia sparsa** W.J. de Wilde, **D15** 194; tree to 40 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.

141.3.18 **Horsfieldia subalpina** J. Sinclair, **TFM1** 325, **D16** 40; tree to 30 m tall; montane forest at 800–1500 m; Pk, Ph, Sl.

141.3.19 **Horsfieldia sucosa** (King) Warb., **TFM1** 328, **D15** 188; tree to 20 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

141.3.20 **Horsfieldia superba** (Hook.*f.* & Thomson) Warb., **FMP3** 55, **TFM1** 328, **D15** 200; tree to 30 m tall; lowland forest; absent from three states only.

141.3.21 **Horsfieldia tomentosa** Warb., **FMP3** 56, **TFM1** 324, **D15** 210; tree to 20 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml, Jh, ?Sp.

141.3.22 **Horsfieldia wallichii** (Hook.*f.* & Thomson) Warb., **FMP3** 57, **TFM1** 330, **D15** 204; tree to 30 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

141.4.1 **Knema andamanica** (Warb.) W.J. de Wilde ssp. **nicobarica** (Warb.) W.J. de Wilde, **D12** 370; tree to 16 m tall; once from Pn.

141.4.2 **Knema communis** J. Sinclair, **TFM1** 334, **D12** 461; tree to 16 m tall; lowland forest; Tg, Pk, Ph, Jh, Sp; endemic.

141.4.3 **Knema conferta** (King) Warb., **FMP3** 70, **TFM1** 335, **D12** 472; tree to 20 m tall; swampy lowland forest; Pk, Ph, Ml, Jh, Sp.

141.4.4a **Knema curtisii** (King) Warb. var. **curtisii**, **FMP3** 69 in part, **TFM1** 334 in part, **D12** 416; tree to 10 m tall; lowland forest; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

141.4.4b **Knema curtisii** (King) Warb. var. **paludosa** J. Sinclair, **D12** 420; *Knema curtisii* (King) Warb., **FMP3** 69 in part, **TFM1** 334 in part; tree to 10 m tall; freshwater swamp forest; Pk, Jh, Sp.

141.4.5 **Knema furfuracea** (Hook.*f.* & Thomson) Warb., **FMP3** 70, **TFM1** 335, **D12** 387; tree to 20 m tall; lowland forest; P. Langkawi, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

141.4.6 **Knema glauca** (Blume) Warb., **D12** 452; *Knema cinerea* (Poir.) Warb. var. *sumatrana auct. non* (Blume) J. Sinclair, **TFM1** 334 in part; tree to 25 m tall; lowland forest; Tg, Pk, Ph, Jh.

141.4.7 **Knema glaucescens** Jack, **D12** 462; *Knema geminata* (Miq.) Warb., **FMP3** 72 in part; *Knema cinerea* (Poir.) Warb. var. *sumatrana auct. non* (Blume) J. Sinclair, **TFM1** 334 in part; tree to 25 m tall; lowland forest; Kl, Jh, Sp.

141.4.8 **Knema globularia** (Lam.) Warb., **TFM1** 336, **D12** 411; *Knema missionis* (Wall. *ex* King) Warb., **FMP3** 71; tree about 10 m tall; usually coastal; P. Langkawi, Kd, Pn, Kl, Tg, Ph, Ml, Jh, Sp.

141.4.9 **Knema hookeriana** (Wall. *ex* Hook.*f.* & Thomson) Warb., **FMP3** 67, **TFM1** 336, **D12** 387; tree to 25 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh, Sp.

141.4.10 **Knema intermedia** (Blume) Warb., **FMP3** 68, **TFM1** 334, **D12** 427; tree to 10 m tall; lowland forest; Pk, Ph, Sl, Ml, Jh, Sp.

141.4.11 **Knema kunstleri** (King) Warb., **FMP3** 69, **TFM1** 338, **D12** 468; tree to 25 m tall; lowland and hill forest on poor soils; Kl, Tg, Pk, Ph, Sl, NS, Jh.

141.4.12 **Knema lamellaria** W.J. de Wilde, **D12** 389; tree to 20 m tall; lowland forest; Tg, Ph; endemic.

141.4.13 **Knema latericia** Elmer ssp. **ridleyi** (Gand.) W.J. de Wilde, **D12** 396; *Knema latericia* Elmer, **TFM1** 332; tree to 10 m tall; lowland forest; Tg, Jh, Sp.

141.4.14a **Knema laurina** (Blume) Warb. var. **heteropilis** W.J. de Wilde, **D12** 381; small tree; lowland forest; Kd, Pk, Ph, Sl, NS.

141.4.14b **Knema laurina** (Blume) Warb. var. **laurina**, **FMP3** 72, **TFM1** 338, **D12** 379; small tree; lowland forest; P. Langkawi, Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

141.4.15 **Knema malayana** Warb., **FMP3** 69, **TFM1** 338, **D12** 456; tree to 15 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

141.4.16 **Knema mandaharan** (Miq.) Warb., **TFM1** 333, **D12** 404; tree to 20 m tall; swampy lowland forest; Pk, Tg, Jh.

141.4.17 **Knema oblongifolia** (King) Warb., **FMP3** 71, **TFM1** 333, **D12** 369; *Knema oblongifolia* (King) Warb. var. *monticola* Warb., **FMP3** 71, **TFM1** 333; tree to 13 m tall; Tg, Pk, Ph, Sl; endemic.

141.4.18 **Knema patentinervia** (J. Sinclair) W.J. de Wilde, **D12** 456; *Knema cinerea* (Poir.) Warb. var. *patentinervia* (J. Sinclair) J. Sinclair, **TFM1** 334; tree to 16 m tall; lowland forest; Kl, Tg, Pk, Ph, Ml, Jh.

141.4.19 **Knema plumulosa** J. Sinclair, **TFM1** 332, **D12** 426; *Knema cantleyi auct. non* (Hook.*f.*) Warb., **FMP3** 68; tree to 16 m tall; swampy lowland forest; Pn, Tg, Pk, Sl, Jh; endemic.

141.4.20 **Knema pseudolaurina** W.J. de Wilde, **D12** 377; tree; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh.

141.4.21 **Knema pulchra** (Miq.) Warb., **D12** 399; *Knema cinerea* (Poir.) Warb. var. *cordata* J. Sinclair, **TFM1** 333; tree to 13 m tall; lowland forest; Tg, Jh.

141.4.22 **Knema retusa** (King) Warb., **FMP3** 72, **TFM1** 332, **D12** 384; tree to 18 m tall; Pk; endemic.

141.4.23a **Knema rigidifolia** J. Sinclair ssp. **camerona** W.J. de Wilde, **TFM1** 339 in part, **D12** 398; tree to 10 m tall; lower montane forest at 1500–1800 m; Cameron Highlands, Ph; endemic.

141.4.23b **Knema rigidifolia** J. Sinclair ssp. **rigidifolia**, **TFM1** 339 in part, **D12** 398; tree to 10 m tall; lower montane forest; Ph, Sl; endemic.

141.4.24 **Knema rubens** (J. Sinclair) W.J. de Wilde, **D12** 450; *Knema cinerea* (Poir.) Warb. var. *rubens* J. Sinclair, **TFM1** 334; tree to 16 m tall; lowland forest; Kd, Pn, Kl, Tg, Ph, Jh, sp.

141.4.25 **Knema scortechinii** (King) J. Sinclair, **TFM1** 339, **D12** 431; *Knema conferta* (King) Warb. var. *scortechinii* Warb., **FMP3** 70; tree to 20 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

141.4.26 **Knema stenophylla** (Warb.) J. Sinclair, **TFM1** 334, **D12** 457; tree to 10 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh.

141.4.27 **Knema sumatrana** (Blume) W.J. de Wilde, **D12** 454; *Knema wrayi* (King) Warb., **FMP3** 70; *Knema cinerea* (Poir.) Warb. var. *sumatrana* (Blume) J. Sinclair, **TFM1** 334 in part; tree to 25 m tall; lowland forest; Kl, Pk.

141.5.1 **Myristica cinnamomea** King, **FMP3** 65, **TFM1** 342; tree to 25 m tall; lowland and hill forest; throughout.

141.5.2 **Myristica crassa** King, **FMP3** 66, **TFM1** 341; *Myristica suavis* King, **FMP3** 65; tree to 25 m tall; lowland forest; Pk, Ml, Jh, Sp; endemic.

141.5.3 **Myristica elliptica** Hook.*f.* & Thomson, **FMP3** 65, **TFM1** 342; tree to 30 m tall; swampy lowland forest; throughout.

141.5.4 **Myristica gigantea** King, **FMP3** 64, **TFM1** 342; tree to 45 m tall; lowland forest; common throughout.

141.5.5 **Myristica guatteriifolia** A. DC., **TFM1** 341; tree to 20 m tall; beach forest; Tg, Ph, Jh.

141.5.6 **Myristica iners** Blume, **FMP3** 64, **TFM1** 343; tree to 30 m tall; lowland forest; common throughout.

141.5.7 **Myristica lowiana** King, **FMP3** 66, **TFM1** 344; stilt-rooted tree to 25 m tall; peat swamp forest; scattered.

141.5.8 **Myristica maingayi** Hook.*f.*, **FMP3** 64, **TFM1** 344; stilt-rooted tree to 45 m tall; lowland forest; common throuhgout.

141.5.9 **Myristica malaccensis** Hook.*f.*, **FMP3** 64, **TFM1** 344; tree; lowlands; Kd, Pk, Ph, Sl, Ml.

141.5.10 **Myristica maxima** Warb., **FMP3** 63, **TFM1** 345; tree to 35 m tall; lowland forest; commonest in the south.

142. MYRSINACEAE

142.1.1 **Aegiceras corniculatum** (L.) Blanco, **TFM4** 266; *Aegiceras majus* Gaertn., **FMP2** 256; small tree to 5 m tall; tidal mud, river estuaries; widespread, frequent on west coast.

142.2.1 **Antistrophe caudata** King & Gamble, **FMP2** 255, **TFM4** 268; slender shrub; hill forest; Pk, Sl, NS, Ml; endemic.

142.2.2 **Antistrophe curtisii** King & Gamble, **FMP2** 256, **TFM4** 268; slender shrub; hill forest at 1200 m; Kd, Pk; endemic.

142.3.1 **Ardisia bambusetorum** King & Gamble, **FMP2** 255, **TFM4** 270, **Y07** 248; shrub to 60 cm tall; bamboo forest; Pk.

142.3.2 **Ardisia barnesii** Ridl., **FMP2** 244, **TFM4** 274; shrub; montane forest; Tg, Pk, Ph; endemic.

142.3.3 **Ardisia biflora** King & Gamble, **FMP2** 244, **TFM4** 274; shrub to 3 m tall; limestone hills; Pk; endemic.

142.3.4 **Ardisia biniflora** Ridl., **FMP2** 241, **TFM4** 274; shrub to 4 m tall; montane forest; Gg Tahan, Ph; endemic.

142.3.5 **Ardisia calophylla** Furtado, **TFM4** 272; shrub; lowland forest; Pk; endemic.

142.3.6 **Ardisia cameronensis** Yuen P. Yang, **Y07** 258; shrub 50–60 cm tall; forest at 1200–1400 m; Tg, Pk, Ph, Sl; endemic.

142.3.7 **Ardisia cardiophylla** B.C. Stone, **S54** 104, **TFM4** 272; ?shrub; Sg Tahan, Ph; endemic.

142.3.8 **Ardisia chrysophyllifolia** King & Gamble, **FMP2** 250, **TFM4** 272; shrub or small tree; montane forest; Tg, Pk; endemic.

142.3.9a **Ardisia colorata** Roxb. var. **colorata**, **FMP2** 246, **TFM4** 276; shrub or small tree to 8 m tall; lowland and hill forest; throughout.

142.3.9b **Ardisia colorata** Roxb. var. **complanata** C.B. Clarke, **FMP2** 247, **TFM4** 276; shrub or small tree to 8 m tall; lowland and hill forest; widespread.

142.3.9c **Ardisia colorata** Roxb. var. **elliptica** King & Gamble, **FMP2** 247, **TFM4** 276; shrub or small tree to 8 m tall; lowland and hill forest; Pk.

142.3.9d **Ardisia colorata** Roxb. var. **polyneura** C.B. Clarke, **FMP2** 247, **TFM4** 276; shrub or small tree to 8 m tall; lowland and hill forest; widespread.

142.3.9e **Ardisia colorata** Roxb. var. **salicifolia** King & Gamble, **FMP2** 247, **TFM4** 276; shrub or small tree to 8 m tall; lowland and hill forest; Pk, Ml.

142.3.10 **Ardisia crassa** C.B. Clarke, **FMP2** 249 in part, **TFM4** 274; small tree; lowland forest; NS, Ml, Sp.

142.3.11 **Ardisia crenata** Sims, **FMP2** 253, **TFM4** 270; shrub; open areas; throughout.

142.3.12 **Ardisia denticulata** Blume, **L02** 162; *Tetrardisia corneri* Furtado, **TFM4** 284; *Tetrardisia denticulata* (Blume) Mez, **S63** 4; shrub to 60 cm tall; swamp forest; Jh.

142.3.13 **Ardisia elliptica** Thunb., **TFM4** 274; *Ardisia littoralis* Andr., **FMP2** 241; shrub to 3 m tall; tidal areas, sea shores; coasts from Ps to Sp.

142.3.14 **Ardisia ferox** Furtado, **TFM4** 272; shrub; Gg Pulai, Jh; endemic.

142.3.15 **Ardisia foliosa** Furtado, **TFM4** 270, **Y07** 251; *Ardisia linearifolia* (*non* Miq.) Ridl., **FMP2** 255; shrub to 20 cm tall; Pk, Kl, Jh; endemic.

142.3.16 **Ardisia fulva** King & Gamble, **FMP2** 250, **TFM4** 271; shrub to 4 m tall; lowland and hill forest; P. Langkawi, Kd, Pn, Kl, Pk; endemic.

142.3.17 **Ardisia furtadoi** B.C. Stone, **S54** 109, **TFM4** 274; small tree to 13 m tall; lowland forest; Jh; endemic.

142.3.18 **Ardisia gambleana** Furtado, **TFM4** 275; shrub; lowland forest; Ph; endemic.

142.3.19 **Ardisia glanduligera** Ridl., **FMP2** 243, **TFM4** 275; shrub; montane forest; Cameron Highlands, Ph; endemic.

142.3.20 **Ardisia goodenoughii** Furtado, **TFM4** 269; shrub; lowland forest; Kl, Tg, Pk, Ph, Sl.

142.3.21 **Ardisia hullettii** Mez, **FMP2** 244, **TFM4** 275; shrub; NS, Jh; endemic.

142.3.22 **Ardisia junghuhniana** Miq. var. **multiflora** B.C. Stone, **S54** 111, **TFM4** 275; shrub or small tree to 10 m tall; lowland forest including swamps; Ph, Sl, Jh; endemic variety.

142.3.23 **Ardisia korthalsiana** Scheff., **TFM4** 276; *Ardisia teysmanniana auct. non* Scheff., **FMP2** 241 in part; shrub or small tree; lowland and hill forest to 1400 m; Tg, Ph, Ml, Jh.

142.3.24 **Ardisia kunstleri** King & Gamble, **FMP2** 243, **TFM4** 275; shrub to 6 m tall; hill forest at 600 m; Pk; endemic.

142.3.25 **Ardisia laevigata** Blume, **TFM4** 270; shrub; montane forest; Cameron Highlands, Ph.

142.3.26 **Ardisia lanceolata** Roxb., **FMP2** 249, **TFM4** 276; tree to 8 m tall; lowland and hill forest; Kd to Sp.

142.3.27 **Ardisia lankawiensis** King & Gamble, **FMP2** 251, **TFM4** 271; tree; often on limestone; P. Langkawi; endemic.

142.3.28 **Ardisia linearifolia** Miq., **TFM4** 273; once from Jh.

142.3.29 **Ardisia longepedunculata** King & Gamble, **FMP2** 254, **TFM4** 271; shrub; montane forest; Gg Batu Puteh, Pk; endemic.

142.3.30 **Ardisia lurida** Blume, **FMP2** 242, **TFM4** 277; tree reaching 6–7 m tall; lowland forest; Pk and Ph to Jh.

142.3.31 **Ardisia maingayi** King & Gamble, **FMP2** 254, **TFM4** 270, **Y07** 255; *Ardisia odontophylla auct. non* Wall. *ex* A. DC., **FMP2** 255, **TFM4** 270; creeping shrub to 1 m tall; lowland and montane forest; Kl, Pk, Ph, Sl, Ml, Jh.

142.3.32 **Ardisia mawaiensis** Furtado *ex* B.C. Stone, **S54** 113, **TFM4** 274; shrub; lowland swamp forest; Jh; endemic.

143.3.33 **Ardisia metallica** N.E. Br., **Y07** 261; shrub to 40 cm tall; lowland forest; once from Tg.

142.3.34 **Ardisia meziana** King & Gamble, **FMP2** 253, **TFM4** 271; shrub to 60 cm tall; on limestone; Pk; endemic.

142.3.35 **Ardisia minor** King & Gamble, **FMP2** 252, **TFM4** 271; shrub to 50 cm tall; once from Pk; endemic.

142.3.36 **Ardisia miqueliana** Scheff., **TFM4** 273; shrub; Jh, Sp.

142.3.37a **Ardisia montana** King & Gamble var. **montana**, **FMP2** 246, **TFM4** 273; shrub to 2 m tall; montane forest 1000–2000 m; Pk, Ph, Sl; endemic.

142.3.37b **Ardisia montana** King & Gamble var. **selangorensis** B.C. Stone, **TFM4** 274; shrub; montane forest at 1100–1500 m; Genting Highlands, Ph/Sl; endemic.

142.3.38 **Ardisia monticola** Ridl., **FMP2** 241, **TFM4** 274; shrub; montane forest; Ph, Sl; endemic.

142.3.39 **Ardisia mystica** B.C. Stone, **S54** 114, **TFM4** 272; small tree to 10 m tall; montane forest; Genting Highlands, Ph/Sl; endemic.

142.3.40 **Ardisia nurii** Furtado, **TFM4** 273; shrub; montane forest; Fraser's Hill, Ph; endemic.

142.3.41 **Ardisia oblongifolia** King & Gamble, **FMP2** 243, **TFM4** 275; shrub; hill forest; Pk; endemic.

142.3.42a **Ardisia ophirensis** Mez var. **labisiifolia** (King & Gamble) B.C. Stone, **TFM4** 273; *Ardisia labisiifolia* King & Gamble, **FMP2** 246; shrub; montane forest; Pk; endemic.

142.3.42b **Ardisia ophirensis** Mez var. **ophirensis**, **FMP2** 245, **TFM4** 273; shrub; montane forest, often on rocks; Pk, Ph, Jh; endemic.

142.3.43 **Ardisia oxyphylla** Wall. *ex* A. DC., **FMP2** 242, **TFM4** 275; shrub or small tree; lowland and hill forest; widespread and common.

142.3.44 **Ardisia pachysandra** (Wall. *ex* Roxb.) Mez, **FMP2** 240, **TFM4** 277; shrub or tree to 12 m tall; lowland and hill forest; Kd, Pn, Tg, Pk, Sl, Jh.

142.3.45 **Ardisia pallidiflora** Ridl., **FMP2** 245, **TFM4** 273; shrub; riverbanks; Jh; endemic.

142.3.46 **Ardisia pendula** Mez, **FMP2** 244, **TFM4** 274; shrub; open country in the lowlands; Ps, Ph, Ml.

142.3.47 **Ardisia perakensis** King & Gamble, **FMP2** 252, **TFM4** 271; small shrub; lowland forest; Pk; endemic.

142.3.48 **Ardisia petricola** Ridl., **FMP2** 247, **TFM4** 273; shrub; montane forest; Ph; endemic.

142.3.49 **Ardisia platyclada** King & Gamble, **FMP2** 247, **TFM4** 273; shrub to 5 m tall; lowland forest; Pk; endemic.

142.3.50 **Ardisia porosa** C.B. Clarke, **FMP2** 248, **L02** 162; *Tetrardisia porosa* (C.B. Clarke) Furtado, **TFM4** 284, **S63** 7; shrub to 3 m tall; lowland and hill forest; Pn, Pk, NS, Ml.

142.3.51 **Ardisia praetermissa** Furtado, **TFM4** 270; shrub; lowland swamp forest; Sl, Ml; endemic.

142.3.52 **Ardisia punctata** Jack, **TFM4** 269; *Ardisia divergens* Roxb., **FMP2** 247; small tree to 6 m tall; hill forest at 800 m; Pn; endemic.

142.3.53 **Ardisia retinervia** Ridl., **FMP2** 241, **TFM4** 272; shrub to 4 m tall; montane forest; Gg Tahan, Ph; endemic.

142.3.54 **Ardisia ridleyi** King & Gamble, **FMP2** 253, **TFM4** 271; shrub to 4 m tall; forests, commoner in the hills; Kd to Sp.

142.3.55 **Ardisia rosea** King & Gamble, **FMP2** 253, **TFM4** 271; shrub to 2 m tall; hill and montane forest above 800 m; Pk, Ph, Sl; endemic.

142.3.56 **Ardisia scortechinii** King & Gamble, **FMP2** 243, **TFM4** 277; tree to 16 m tall; lowland forest; Pk; endemic.

142.3.57 **Ardisia sessilis** Scheff., **TFM4** 273; *Ardisia crassa auct. non* C.B. Clarke, **FMP2** 249 in part; shrub or small tree; lowland forest; Sp.

142.3.58 **Ardisia singaporensis** Ridl., **FMP2** 251, **TFM4** 270; small tree; coastal; Jh, Sp; endemic.

142.3.59 **Ardisia sinuata** King & Gamble, **FMP2** 246, **TFM4** 274; shrub to 4 m tall; lowland forest; Pk; endemic.

142.3.60 **Ardisia solanacea** Roxb., **FMP2** 242, **TFM4** 275; shrub to 3 m tall; lowland forest; Pk, Sl.

142.3.61 **Ardisia solanoides** King & Gamble, **FMP2** 250, **TFM4** 271; shrub to 2 m tall; lowland and hill forest; Pk; endemic.

142.3.62 **Ardisia solida** B.C. Stone, **S54** 113, **TFM4** 272; shrub to 5 m tall; lower montane forest at 1000 m; Gg Besar, Jh; endemic.

142.3.63 **Ardisia suffruticosa** Ridl., **FMP2** 243, **TFM4** 275; shrub to 30 cm tall; lowland and hill forest; Pk, Ph, Jh (once each); endemic.

142.3.64 **Ardisia sumatrana** Miq., **FMP2** 249, **TFM4** 274; shrub or small tree to 6 m tall; Pk, Sl.

142.3.65 **Ardisia tahanica** King & Gamble, **FMP2** 242, **TFM4** 275; shrub; lowland river banks; Kl, Ph, Jh; endemic.

142.3.66 **Ardisia tetrasepala** King & Gamble, **FMP2** 244, **L02** 162; *Tetrardisia tetrasepala* (King & Gamble) Furtado, **TFM4** 284, S60 9; shrub; hill forest; Jh; endemic.

142.3.67 **Ardisia teysmanniana** Scheff., **FMP2** 240 in part, **TFM4** 272; shrub or small tree to 6 m tall; lowland and hill forest; Ml, Jh, Sp.

142.3.68 **Ardisia theifolia** King & Gamble, **FMP2** 254, **TFM4** 270, **Y07** 236; slender shrub to 2 m tall; montane forest, mostly above 1400 m; Pk, Ph; endemic.

142.3.69 **Ardisia tuberculata** Wall. *ex* A. DC., **FMP2** 245, **TFM4** 273; shrub to 4 m tall; lowland forest; Ml, Jh, Sp.

142.3.70 **Ardisia tumida** Furtado, **TFM4** 270; shrub; lowland forest by streams; Tg; endemic.

142.3.71 **Ardisia vaughanii** Ridl., **FMP2** 248, **TFM4** 272; shrub; hill forest; Ps, Kd, Kl, Pk, Ph; endemic.

142.3.72a **Ardisia villosa** Roxb. var. **glabrata** Kurz, **FMP2** 251, **TFM4** 271; shrub to 1 m tall; lowland forest; Kd, Pn, Pk, Ph.

142.3.72b **Ardisia villosa** Roxb. var. **villosa**, **FMP2** 251, **TFM4** 271; shrub to 1 m tall; lowland forest; throughout.

142.3.73 **Ardisia viminea** Ridl., **TFM4** 270; shrub; hill and montane forest; Ulu Gombak and Genting Highlands, Sl; endemic.

142.3.74 **Ardisia virens** Kurz, **FMP2** 252, **TFM4** 271; large shrub; hill forest; Pk.

142.3.75 **Ardisia wrayi** King & Gamble, **FMP2** 252, **TFM4** 271; shrub to 2 m tall; lowland and hill forest to 1200 m; Kl to Jh; endemic.

142.3.76 **Ardisia sp.** X, **TFM4** 273; montane forest at 1300 m; once from Gg Lawit, Tg; ?endemic.

142.3.77 **Ardisia sp.** Z, **TFM4** 273; *Ardisia andamanica auct. non* Kurz, **FMP2** 245; shrub to 4 m tall; hill and lower montane forest; Kl, Pk, Sl, Ml, Jh; ?endemic.

142.4.1 **Embelia angulosa** King & Gamble, **FMP2** 234, **TFM4** 279; liana; montane forest generally above 1400 m; Pk, Ph, Sl.

142.4.2a **Embelia canescens** Jack var. **canescens**, **FMP2** 232, **TFM4** 279; slender liana; lowland and hill forest; Pn, Pk, Sl, Ml, Jh, Sp; endemic.

142.4.2b **Embelia canescens** Jack var. **glabrescens** Ridl., **FMP2** 232, **TFM4** 279; slender liana; lowland and hill forest; Ml, Sp; endemic.

142.4.3 **Embelia coriacea** Wall. *ex* A.DC., **FMP2** 233, **TFM4** 279; large liana; lowland and hill forest; Kd, Pn, Tg, Pk, ?Ph, Sl, NS, Ml, Jh, Sp.

142.4.4 **Embelia dasythyrsa** Miq., **FMP2** 232, **TFM4** 279; liana; lowland forest; Pk, Ph, Sl, Jh, Sp.

142.4.5 **Embelia furculosa** B.C. Stone, **S54** 116, **TFM4** 280; slender liana; montane forest; Gg Benom, Ph; endemic.

142.4.6 **Embelia macrocarpa** King & Gamble, **FMP2** 234, **TFM4** 279; liana; lowland and hill forest; P. Langkawi, Pn.

142.4.7 **Embelia myrtillus** Kurz, **FMP2** 235, **TFM4** 280; climbing shrub; montane forest; mountain tops; Kd to Jh.

142.4.8 **Embelia parviflora** Wall. *ex* A. DC., **FMP2** 236, **TFM4** 280; slender liana; montane forest above 1000 m; Kl, Pk, Ph.

142.4.9 **Embelia penangiana** (Oliv.) Mez, **FMP2** 233, **TFM4** 279; large liana; lowland and hill forest; Pn, Pk; endemic.

142.4.10 **Embelia ribes** Burm., **TFM4** 279; *Embelia garciniifolia* Wall. *ex* Miq., **FMP2** 232; liana; lowland forest; throughout.

142.4.11 **Embelia rotundifolia** Ridl., **FMP2** 235, **TFM4** 280; climbing shrub; montane forest at 1500 m; Gg Kerbau, Pk; endemic.

142.4.12 **Embelia rugosa** (King & Gamble) Ridl., **FMP2** 233, **TFM4** 279; liana; hill and montane forest; Pn, Pk, Ph, Sl; endemic.

142.4.13 **Embelia scortechinii** King & Gamble, **FMP2** 233, **TFM4** 279; liana; Pk; endemic.

142.4.14 **Embelia subcordata** Ridl., **FMP2** 236, **TFM4** 280; slender liana; lower montane forest; Semangkok Pass, Sl; endemic.

142.5.1 **Grenacheria amentacea** (C.B. Clarke) Mez; *Embelia amentacea* C.B. Clarke, **FMP2** 234, **TFM4** 278; slender liana; lowland forest; widespread.

142.5.2 **Grenacheria fulva** (Mez) Airy Shaw, **A01** 514; *Embelia fulva* Mez, **TFM4** 279; climber; lowland forest; Jh, Sp.

142.5.3 **Grenacheria lampani** (Scheff.) Mez; *Embelia lampani* Scheff., **FMP2** 234, **TFM4** 279; slender liana; lowland forest; Pn to Sp.

142.6.1 **Hymenandra iteophylla** (Ridl.) Furtado, **TFM4** 281; *Ardisia iteophylla* Ridl., **FMP5** 318; shrub; hill forest at 500 m; Gg Besidong, Jh; endemic.

142.7.1 **Labisia acuta** Ridl., **FMP2** 237, **S62** 47, **TFM4** 282; subshrub to 30 cm tall; lowland forest; Jh; endemic.

142.7.2 **Labisia longistyla** King & Gamble, **FMP2** 237, **S62** 45, **TFM4** 281; shrub to 60 cm tall; montane forest; Pk, Ph, Sl; endemic.

142.7.3 **Labisia paucifolia** King & Gamble, **FMP2** 237, **S62** 47, **TFM4** 282; subshrub to 40 cm tall; montane forest above 1000 m; Kd, Tg, Pk, Ph, Sl; endemic.

142.7.4a **Labisia pumila** (Blume) Fern.-Vill. var. **alata** Scheff., **S62** 50; *Labisia pothoina* Lindl. var. *alata* (Scheff.) Ridl., **FMP2** 237; herbaceous undershrub; lowland and hill forest; widespread.

142.7.4b **Labisia pumila** (Blume) Fern.-Vill. var. **lanceolata** (Scheff.) Mez, **S62** 47, **TFM4** 282; *Labisia pothoina* Lindl. var. *lanceolata* (Scheff.) Ridl., **FMP2** 237; herbaceous undershrub; lowland and hill forest; widespread.

142.7.4c **Labisia pumila** (Blume) Fern.-Vill. var. **pumila**, **S62** 47, **TFM4** 281; *Labisia pothoina* Lindl., **FMP2** 237; herbaceous undershrub; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

142.8.1 **Maesa arborea** Ridl., **FMP2** 228, **TFM4** 283; small tree; lowland forest; Kl; ?endemic.

142.8.2 **Maesa impressinervis** King & Gamble, **FMP2** 228, **TFM4** 282; shrub to 7 m tall; mountain summits above 1500 m; Gg Bubu, Pk, Gg Brinchang, Ph; endemic.

142.8.3 **Maesa indica** Wall., **FMP2** 229, **TFM4** 282; shrub; lowland and hill forest; Ps & Kd to Ml.

142.8.4 **Maesa lancifolia** Ridl., **FMP2** 228, **TFM4** 283; shrub; lowlands; Kl; ?endemic.

142.8.5 **Maesa macrophylla** Wall. *ex* Roxb., **TFM4** 283; shrub; montane forest; Gg Brinchang, Ph.

142.8.6 **Maesa macrothyrsa** Miq., **FMP2** 227, **TFM4** 283; slender liana; lowland forest; Ph to Jh.

142.8.7 **Maesa oocarpa** Ridl., **FMP2** 229, **TFM4** 283; large shrub; lowland forest; Kl; ?endemic.

142.8.8 **Maesa ramentacea** Wall. *ex* Roxb., **FMP2** 227, **TFM4** 283; shrub or small tree to 15 m tall; lowland and hill forest to 1200 m; throughout.

142.8.9 **Maesa striata** Mez, **FMP2** 228, **TFM4** 283; *Maesa pahangiana* King & Gamble, **FMP2** 229; shrub; lowland and hill forest; Kd, Pn, Pk, Ph.

Stone [**TFM4**] considers *M. arborea*, *M. lanceifolia* and *M. oocarpa* nearly impossible to separate from *M. ramentacea* and each other.

142.9.1 **Rapanea perakensis** (King & Gamble) B.C. Stone, **TFM4** 283; *Myrsine perakensis* King & Gamble, **FMP2** 230; *Myrsine wrayi* King & Gamble, **FMP2** 230; shrub or small tree to 10 m tall; hill and montane forest at 700–2100 m; Kl, Tg, Pk, Ph, Sl; endemic.

142.9.2 **Rapanea porteriana** Wall. *ex* A. DC., **TFM4** 284; *Myrsine avenis* (Blume) DC., **FMP2** 230; *Myrsine porteriana* Wall. *ex* A. DC., **FMP2** 230; *Myrsine umbellulata* (Wall.) DC., **FMP2** 231; shrub or small tree to 10 m tall; coasts, lowlands, hills and mountains to 1700 m; throughout.

143. MYRTACEAE

143.1.1 **Acmena acuminatissima** (Blume) Merr. & L.M. Perry; **M33** 361; *Eugenia acuminatissima* (*non* Miq.) Kurz, **FMP1** 747; *Eugenia cumingiana* Vidal, **H36** 260, **TFM3** 188; tree to 21 m tall; lowland to montane forest; widespread.

143.2.1 **Baeckea frutescens** L., **FMP1** 712, **TFM3** 170; shrub or small tree to 6 m tall; mountain tops, quartzite ridges and sandy lowland heaths; widespread.

143.3.1 **Cleistocalyx nervosum** (DC.) Kosterm., **K06**; *Cleistocalyx operculata* (Roxb.) Merr. & L.M. Perry, **M33** 363; *Syzygium operculatum* (Roxb.) Niedenzu, **H59** 108; *Eugenia operculata* Roxb., **FMP1** 754, **H36** 264, **TFM3** 205; *Syzygium nervosum* DC., **P03** 299; tree to 39 m tall; lowland forest, often near streams; Kd, Pn, Tg, Pk, Ph, Sl, Jh.

143.4.1a **Decaspermum parviflorum** (Lam.) A.J. Scott var. **caudatum** A.J. Scott, **S15** 410; shrub; on limestone; Bt Takun, Sl; endemic variety.

143.4.1b **Decaspermum parviflorum** (Lam.) A.J. Scott var. **parviflorum**, **S15** 409; *Decaspermum paniculatum* Kurz, **FMP1** 717; *Decaspermum fruticosum auct. non* J.R. Forst. & G. Forst., **TFM3** 171; shrub or small tree to 15 m tall; secondary forest and primary forest margins; widespread.

Parnell and Nic Lughadha [**P07** 704] refer the Malayan material of *Decaspermum parviflorum* to their subspecies *quadripartitum*.

143.4.2 **Decaspermum montanum** Ridl., **FMP1** 718, **TFM3** 172, **S15** 406; shrub; montane forest above 900 m; Gg Jerai, Kd; Gg Ulu Kali, Ph; Gg Ledang, Jh; ?endemic.

143.5.1 **Leptospermum amboinense** Blume, **B15** 653; *Leptospermum flavescens* Sm. var. *angustifolium* Ridl., **FMP1** 713; *Leptospermum flavescens* Sm., **TFM3** 248 in part; *Leptospermum javanicum* Blume, **T11** in part; shrub or small tree; montane forest; Kd, Ml, Jh.

143.5.2 **Leptospermum javanicum** Blume, **T11** 390 in part, **B15** 652; *Leptospermum flavescens* Sm., **FMP1** 713 incl. var. *javanicum* King, **TFM3** 248 in part; shrub or small tree; montane forest at high altitudes; Ph, Sl.

143.6.1 **Melaleuca cajuputi** Powell, **TFM3** 248; *Melaleuca leucadendron* L. *sensu lato*, **FMP1** 713; shrub or tree to 24 m tall; swampy ground near the sea; widespread.

143.7.1 **Rhodamnia cinerea** Jack, **FMP1** 716 incl. var. *caudata* Ridl., **TFM3** 250, **S14** 435; tree to 15 m tall; lowland (secondary) forest, often near the sea; common throughout.

143.7.2 **Rhodamnia dumetorum** (DC.) Merr. & L.M. Perry, **S14** 437; shrub or small tree to 8 m tall; P. Langkawi.

143.7.3 **Rhodamnia uniflora** (Ridl.) Burkill, **S14** 440; *Rhodamnia cinerea* Jack var. *uniflora* Ridl., **FMP1** 716; shrub to 9 m tall; montane forest at 600–1700 m; Kd, Kl, Tg, Pk, Ph, Jh.

143.8.1 **Rhodomyrtus tomentosa** (Aiton) Hassk., **FMP1** 717, **S13** 313; shrub to 3 m tall; open sandy ground; common throughout, particularly on the East Coast.

143.9.1 **Stereocaryum symingtonianum** (M.R. Hend.) A.J. Scott, **S16** 496; *Eugenia symingtoniana* M.R. Hend., **H36** 267, **TFM3** 218; tree to 13 m tall; hill and montane forest; Kl, Tg, Pk, Ph; endemic.

143.9.2 **Stereocaryum watsonianum** (M.R. Hend.) A.J. Scott, **S16** 496; *Eugenia watsoniana* M.R. Hend., **H36** 268, **TFM3** 222; tree to 10 m tall; lowland forest; Sl; endemic.

143.10.1 **Syzygium alyxiifolium** (Ridl.) I.M. Turner, **T22** 15; *Eugenia alyxiifolia* Ridl., **FMP5** 309, **H36** 215, **TFM3** 182; shrub; montane forest; once from Fraser's Hill, Ph; endemic.

143.10.2 **Syzygium anacardiifolium** (Craib) P. Chantaranothai & J. Parn., **C03** 592, **T22** 15, **C04** 34; tree to 15 m tall; lowland forest; once from Ulu Trengganu, Tg.

143.10.3 **Syzygium anisosepalum** (Duthie) I.M. Turner, **T22** 15; *Eugenia anisosepala* Duthie, **FMP1** 736, **H36** 114, **TFM3** 183; tree to 20 m tall; lowland and hill forest; Kd, Ph, Sl, NS, Ml; endemic.

143.10.4a **Syzygium attenuatum** (Miq.) Merr. & L.M. Perry ssp. **attenuatum** var. **attenuatum**, **M34** 185, **M33** 376, **T22** 15; *Eugenia attenuata* (Miq.) Koord. & Valeton, **H36** 238, **TFM3** 183; *Eugenia penangiana* Duthie, **FMP1** 740, in part; tree to 6 m tall; lowland to lower montane forest; Kd, Pn, Ph, Sl, Ml, Jh, Sp.

143.10.4b **Syzygium attenuatum** (Miq.) Merr. & L.M. Perry ssp. **attenuatum** var. **montanum** (M.R. Hend.) P. Chantaranothai & J. Parn., **C03** 593, **C04** 40, **T22** 15; *Eugenia attenuata* (Miq.) Koord. & Valeton var. *montana* M.R. Hend., **H36** 242, **TFM3** 183; small tree; montane forest, rocky ridges; Ph, Sl.

143.10.4c **Syzygium attenuatum** (Miq.) Merr. & L.M. Perry ssp. **attenuatum** var. **ophirense** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia attenuata* (Miq.) Koord. & Valeton var. *ophirensis* M.R. Hend., **H36** 241, **TFM3** 183; small tree; montane forest; only known from Gg Ledang (Mt Ophir), Jh; endemic variety.

143.10.4d **Syzygium attenuatum** (Miq.) Merr. & L.M. Perry ssp. **cirsumscissum** (Gagnep.) P. Chantaranothai & J. Parn., **C03** 593, **C04** 41; *Eugenia rhamphiphylla* Craib, **H36** 242, **TFM3** 214; tree to 24 m tall; lowland forest; Kd, Pn.

143.10.5 **Syzygium avene** Miq., **T22** 15; *Eugenia avenis* (Miq.) M.R. Hend., **H36** 171, **TFM3** 184; *Eugenia scoparia* Duthie, **FMP1** 748; tree; lowland forest; Ml, Jh, Sp.

143.10.6 **Syzygium borneense** (Miq.) Miq., **C04** 45, **T22** 15; *Eugenia microcalyx* Duthie , **FMP1** 745 incl. var. *obovata* King in part, **H36** 205, **TFM3** 202; *Eugenia microcalyx* Duthie var. *irregularis* (Craib) M.R. Hend., **H36** 207, **TFM3** 202; tree to 16 m tall; lowland forest; Pn to Sp to west of Main Range.

143.10.7a **Syzygium burkillianum** (King) I.M. Turner var. **burkillianum**, **T22** 15; *Eugenia burkilliana* King, **FMP1** 735, **H36** 116, **TFM3** 184; tree to 18 m tall; lowland forest; Pk; endemic.

143.10.7b **Syzygium burkillianum** (King) I.M. Turner var. **garcinifolioides** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia burkilliana* King var. *garcinifolioides* M.R. Hend., **H36** 118, **TFM3** 184; tree; Ph, Sl; lowland forest; endemic.

143.10.8 **Syzygium cameronum** I.M. Turner, **T22** 15; *Eugenia goniocalyx* Ridl., **FMP5** 309, **H36** 165, **TFM3** 193; tree to 18 m tall; montane forest at 1500 m; Cameron Highlands and Fraser's Hill, Ph; endemic.

143.10.9 **Syzygium campanulatum** Korth., **C04** 47, **T22** 15; *Eugenia myrtifolia* (*non* Salisb.) Roxb., **FMP1** 750; *Eugenia oleina* Wight *nom. nud.*, **H36** 150, **TFM3** 205; small tree; coasts; Pn, Jh, Sp.

143.10.10 **Syzygium camptophyllum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia camptophylla* M.R. Hend., **H36** 140, **TFM3** 184; tree to 15 m tall; lowland forest; once from near Gopeng, Pk; endemic.

143.10.11 **Syzygium castaneum** (Merr.) Merr. & L.M. Perry, **M34** 156, **T22** 15; *Eugenia castanea* Merr., **H36** 156, **TFM3** 185; small tree; swampy lowland forest; Pk, Jh; endemic.

143.10.12 **Syzygium cerasiforme** (Blume) Merr. & L.M. Perry, **M34** 187, **C04** 49, **T22** 15; *Eugenia cerasiformis* (Blume) DC., **H36** 196, **TFM3** 185; *Eugenia expansa* (*non* Mart.) Duthie, **FMP1** 745; *Eugenia robinsoniana* Ridl., **FMP1** 734; *Eugenia evansii* Ridl., **FMP1** 747; small tree to 6 m tall; lowland forest; P. Langkawi to Ml.

143.10.13a **Syzygium cerinum** (M.R. Hend.) I.M. Turner var. **cerinum**. **T22** 15; *Eugenia cerina* M.R. Hend., **H36** 168, **TFM3** 185; *Eugenia punctulata* (*non* F.M. Bailey) King. **FMP1** 747; tree to 27 m tall; swampy lowland forest; Pn to Sp.

143.10.13b **Syzygium cerinum** (M.R. Hend.) I.M. Turner var. **montanum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia cerina* M.R. Hend. var. *montana* M.R. Hend., **H36** 171, **TFM3** 186; tree; montane forest; Tg, Pk, Ph, Jh.

143.10.13c **Syzygium cerinum** (M.R. Hend.) I.M. Turner var. **turbinatum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia cerina* M.R. Hend. var. *turbinata* M.R. Hend.; **H36** 170, **TFM3** 186; tree; lowland forest; Ph, Sl, NS, Jh, Sp.

143.10.14 **Syzygium chloranthum** (Duthie) Merr. & L.M. Perry, **M34** 173; *Eugenia chlorantha* Duthie, **FMP1** 734, **H36** 107, **TFM3** 186; tree to 24 m tall; lowland and hill forest; Kd to Sp.

143.10.15 **Syzygium chloroleucum** (King) Masam.; *Eugenia chloroleuca* King, **FMP1** 744, **H36** 189, **TFM3** 186; shrub or small tree; lowland and hill forest; Pk, Ph, Sl, Jh.

143.10.16 **Syzygium cinereum** (Kurz) P. Chantaranothai & J. Parn., **C03** 596, **C04** 51; *Eugenia cinerea* Kurz, **FMP1** 744; *Eugenia pseudosubtilis* King, **FMP1** 746 incl. var. *subacuminata* King, **H36** 202 incl. var. *montana* M.R. Hend., **TFM3** 212; tree to 30 m tall; lowland forest, sometimes in the mountains; widespread.

143.10.17a **Syzygium claviflorum** (Roxb.) Wall. *ex* A.M. Cowan & Cowan var. **claviflorum**. **M33** 382, **C04** 53, **T22** 15; *Eugenia claviflora* Roxb., **FMP1** 742, **H36** 252, **TFM3** 186; *Eugenia leptantha* (*non* Benth.) Wight, **FMP1** 741; *Eugenia claviflora* Roxb. var. *leptalea* (Craib) M.R. Hend., **H36** 255, **TFM3** 187; *Acmenosperma claviflorum* (Roxb.) Kausel var. *claviflorum*, **H59** 24; medium-sized tree; lowland and hill forest; Ps, P. Langkawi, Tg, Kd, Pn, Pk, Ph, Sp.

143.10.17b **Syzygium claviflorum** (Roxb.) Wall. *ex* A.M. Cowan & Cowan var. **excavatum** (King) I.M. Turner, **T22** 15; *Eugenia claviflora* Roxb. var. *excavata* King, **H36** 257, **TFM3** 187; medium-sized tree; lowland and hill forest; Pn, Pk; endemic variety.

143.10.17c **Syzygium claviflorum** (Roxb.) Wall. *ex* A.M. Cowan & Cowan var. **glandulosum** (King) P. Chantaranothai & J. Parn., **C02** 590, **T22** 15; tree.

143.10.17d **Syzygium claviflorum** (Roxb.) Wall. *ex* A.M. Cowan & Cowan var. **maingayi** (Duthie) P. Chantaranothai & J. Parn., **C03** 590, **T22** 15; *Eugenia claviflora* Roxb. var. *maingayi* (Duthie) King, **H36** 257, **TFM3** 187; shrub or small tree; lowland and hill forest; Pn, Kl, Ph, NS, Jh; endemic variety.

143.10.17e **Syzygium claviflorum** (Roxb.) Wall. *ex* A.M. Cowan & Cowan var. **montanum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia claviflora* var. *montana* M.R. Hend., **H36** 260, **TFM3** 187; tree; hill and montane forest; Kd, Tg, Ph, Sl, Jh; endemic variety.

143.10.17f **Syzygium claviflorum** (Roxb.) Wall. *ex* A.M. Cowan & Cowan var. **riparium** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia claviflora* var. *riparia* M.R. Hend., **H36** 257, **TFM3** 187; tree; river banks; Sg Tahan, Ph; endemic variety.

143.10.18 **Syzygium clypeolatum** (Ridl.) I.M. Turner, **T22** 15; *Eugenia clypeolata* Ridl., **FMP1** 754, **H36** 227, **TFM3** 197; shrub; once from Gg Tahan, Ph; endemic.

143.10.19a **Syzygium conglomeratum** (Duthie) I.M. Turner var. **conglomerata**, **T22** 15; *Eugenia conglomerata* Duthie, **FMP1** 742, **H36** 198, **TFM3** 188; tree to 27 m tall; ?lowland forest; Sl, Ml, Jh, Sp; endemic.

143.10.19b **Syzygium conglomeratum** (Duthie) I.M. Turner var. **paniculatum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia conglomerata* Duthie var. *paniculata* M.R. Hend., **H36** 201, **TFM3** 188; tree; lowland forest; once from Sg Kayu Ara, Jh; endemic.

143.10.20 **Syzygium cordifoliatum** (Ridl.) I.M. Turner, **T22** 15; *Eugenia cordifoliata* Ridl., **FMP1** 736, **H36** 95, **TFM3** 188 '*cordifoliolata*'; tree; once from Pk; endemic.

143.10.21a **Syzygium curtisii** (King) Merr. & L.M. Perry var. **curtisii**, **T22** 15, **M34** 182; *Eugenia curtisii* King, **FMP1** 749, **H36** 174, **TFM3** 188; tree to 25 m tall; lowland forest; Kl, Pk, Jh.

143.10.21b **Syzygium curtisii** (King) Merr. & L.M. Perry var. **holttumii** (Ridl.) I.M. Turner, **T22** 15; *Eugenia holttumii* Ridl., **FMP5** 309; *Eugenia curtisii* King var. *holttumii* (Ridl.) M.R. Hend., **H36** 176, **TFM3** 189; montane forest; Ph; endemic variety.

143.10.21c **Syzygium curtisii** (King) Merr. & L.M. Perry var. **minus** (King) I.M. Turner, **T22** 15; *Eugenia curtisii* King var. *minor* King, **FMP1** 749, **H36** 175, **TFM3** 189; lowland forest; Pk, Ph, Ml; endemic variety.

143.10.22 **Syzygium cyrtophylloides** (Ridl.) I.M. Turner, **T22** 15; *Eugenia cyrtophylloides* Ridl., **FMP1** 749, **H36** 167, **TFM3** 189; tree; montane forest; once from Gg Tahan, Ph; endemic.

143.10.23 **Syzygium diospyrifolium** (Wall. *ex* Duthie) S.N. Mitra, **C04** 57, **T22** 15; *Eugenia diospyrifolia* Wall. *ex* Duthie, **H36** 67, **TFM3** 190; small tree; lowland and hill forest; Kd, Pn, Tg, Ph.

143.10.24 **Syzygium duthieanum** (King) Masam., **C04** 58, **T22** 15; *Eugenia duthieana* King, **FMP1** 731, **H36** 118, **TFM3** 190; tree to 36 m tall; lowland and hill forest; Kd, Pn, Tg, Pk, Ph, Jh, Sp; endemic.

143.10.25 **Syzygium dyerianum** (King) P. Chantaranothai & J. Parn.. **C03** 596. **C04** 59. **T22** 15: *Eugenia dyeriana* King. **FMP1** 732 incl. var. *oblonga* King. **H36** 126. **TFM3** 190: *Eugenia corrugata* King. **FMP1** 732: *Eugenia atronervia* M.R. Hend.. **H34** 91: tree to 24 m tall: lowland to lower montane forest at 1300 m: common throughout.

143.10.26 **Syzygium fastigiatum** (Blume) Merr. & L.M. Perry. **M34** 152. **M33** 389. **C04** 60. **T22** 15: *Eugenia fastigiata* (Blume) Koord. & Valeton. **H36** 190. **TFM3** 191: *Eugenia bracteolata* Wight. **FMP1** 747: tree to 25 m tall: lowland and hill forest: widespread.

143.10.27a **Syzygium filiforme** (Wall. *ex* Duthie) P. Chantaranothai & J. Parn. var. **clavimyrtus** (Koord. & Valeton) I.M. Turner. **T22** 15: *Eugenia filiformis* Wall. *ex* Duthie var. *clavimyrtus* (Koord. & Valeton) M.R. Hend.. **H36** 147. **TFM3** 191: tree: lowland and hill forest: Pn to Sp.

143.10.27b **Syzygium filiforme** (Wall. *ex* Duthie) P. Chantaranothai & J. Parn. var. **constrictum** (Kochummen) I.M. Turner. **T22** 15: *Eugenia filiformis* Wall. *ex* Duthie var. *constricta* Kochummen. **TFM3** 191: tree: hill forest: once from Ulu Gombak F.R.. Sl: endemic variety.

143.10.27c **Syzygium filiforme** (Wall. *ex* Duthie) P. Chantaranothai & J. Parn. var. **filiforme**. **C03** 598. **C04** 61: *Eugenia filiformis* Wall. *ex* Duthie. **FMP1** 740. **H36** 145. **TFM3** 191: tree to 42 m tall: lowland forest: Pk to Sp.

143.10.28 **Syzygium flosculiferum** (M.R. Hend.) Sreek.. **T22** 15: *Eugenia flosculifera* M.R. Hend.. **H36** 237. **TFM3** 191: tree to 45 m tall: lowland and hill forest: Kd. Pk. Ph. Sl. Ml. Jh. Sp.

143.10.29 **Syzygium foxworthianum** (Ridl.) Merr. & L.M. Perry. **M32** 168. **C04** 63. **T22** 15. *Eugenia densiflora* (Blume) Miq. var. *angustifolia* Ridl.. **FMP1** 729. **H36** 79. **TFM3** 189: *Eugenia foxworthyi* (*non* Elmer) Ridl.. **FMP1** 728: *Eugenia foxworthiana* Ridl.. **FMP5** 308: small bushy tree: riverbanks: Kl. Tg. Pk. Ph.

143.10.30 **Syzygium fusticuliferum** (Ridl.) Merr. & L.M. Perry. **M34** 184. **T22** 15: *Eugenia fusticulifera* Ridl.. **H36** 246. **TFM3** 192: tree to 15 m tall: lowland forest: once from near Rompin. Ph.

143.10.31 **Syzygium gageanum** (King) I.M. Turner. **T22** 15: *Eugenia gageana* King. **FMP1** 729. **H36** 133. **TFM3** 192: tree to 15 m tall: lowland forest: once from near Larut. Pk: endemic.

143.10.32 **Syzygium garcinifolium** (King) Merr. & L.M. Perry. **M34** 167. **T22** 15: *Eugenia garcinifolia* King. **FMP1** 730. **H36** 83. **TFM3** 192: tree to 39 m tall: lowland and hill forest: Kl. Tg. Pk. Sl. NS. Jh.

143.10.33 **Syzygium glaucum** (King) P. Chantaranothai & J. Parn., **C03** 598, **C04** 66, **T22** 15; *Eugenia glauca* King, **FMP1** 737, **H36** 112, **TFM3** 193; *Eugenia pseudoglauca* (King) Ridl., **FMP1** 737; *Eugenia glauca* King var. *pseudoglauca* King, **H36** 113, **TFM3** 193; tree to 45 m tall; lowland forest; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

143.10.34 **Syzygium goodenovii** (King) Masam., **T22** 15; *Eugenia goodenovii* King, **FMP1** 731 in part, **H36** 172, **TFM3** 193; tree to 27 m tall; lowland forest; Pk, NS, Ml; endemic.

143.10.35 **Syzygium gracile** (Korth.) Amsh., **M33** 392, **T22** 15; *Eugenia virens* (Blume) Koord. & Valeton, **H36** 249, **TFM3** 222; *Eugenia fusiformis* Duthie, **FMP1** 727; *Syzygium fusiforme* (Duthie) Merr. & L.M. Perry, **M34** 176; tree to 30 m tall; lowland forest; Pk, Ml, Jh, Sp.

143.10.36 **Syzygium graeme-andersoniae** (Ridl.) I.M. Turner, **T22** 15; *Eugenia graeme-andersoniae* Ridl., **FMP1** 743, **H36** 111, **TFM3** 193; tree to 6 m tall; lowland river banks; Kl, Ph; endemic.

143.10.37 **Syzygium grande** (Wight) Walp., **T22** 15, **M34** 176, **C04** 68; *Eugenia grandis* Wight, **FMP1** 729, **H36** 87, **TFM3** 195; tree to 30 m tall; sandy and rocky coasts, also widely planted; throughout.

143.10.38 **Syzygium gratum** (Wight) S.N. Mitra, **C04** 70, **T22** 15; *Eugenia grata* Wight, **FMP1** 739, **H36** 233; *Eugenia spicata auct. non* Lam., **TFM3** 217 in part; tree to 20 m tall; mostly on rocky and sandy shore; widespread.

143.10.39 **Syzygium griffithii** (Duthie) Merr. & L.M. Perry, **M34** 174, **T22** 15; *Eugenia griffithii* Duthie, **FMP1** 731, **H36** 120, **TFM3** 195; tree to 36 m tall; lowland and hill forests; Kd to Sp.

143.10.40 **Syzygium haniffii** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia haniffii* M.R. Hend., **H36** 139, **TFM3** 195; tree to 18 m tall; hill forest; Pn, Sl; endemic.

143.10.41 **Syzygium helferi** (Duthie) P. Chantaranothai & J. Parn., **C03** 599, **C04** 73, **T22** 15; *Eugenia helferi* Duthie, **FMP1** 735, **H36** 109, **TFM3** 196; tree to 18 m tall; rocky forest, often near the sea; P. Langkawi, Kd, Pn.

143.10.42 **Syzygium hemsleyanum** (King) P. Chantaranothai & J. Parn., **C03** 599, **T22** 15; *Eugenia hemsleyana* King, **FMP1** 732, **H36** 129, **TFM3** 196; tree to 10 m tall; lowland forest; Pk, Ph.

143.10.43 **Syzygium hendersonii** Merr., **M33** 369, **T22** 15; *Eugenia auriculata* Ridl., **FMP1** 726, **H36** 54, **TFM3** 183; tree; lowland forest; once from near Lumut, Pk; endemic.

143.10.44 **Syzygium hoseanum** (King) Merr. & L.M. Perry, **M34** 150, **T22** 15; *Eugenia hoseana* King, **FMP1** 733, **H36** 103, **TFM3** 196; tree to 15 m tall; lowland and hill forest; Pk, Jh.

143.10.45 **Syzygium hulletianum** (King) P. Chantaranothai & J. Parn., **C03** 601, **C04** 75, **T22** 15; *Eugenia hulletiana* King, **FMP1** 735; tree; lowland forest; Pk.

143.10.46 **Syzygium inasense** (King) I.M. Turner, **T22** 15; *Eugenia inasensis* King, **FMP1** 751, **H36** 100, **TFM3** 196; small tree; montane forest at 1700 m; thrice from Gg Inas, Pk; endemic.

143.10.47a **Syzygium inophyllum** DC. var. **bernardii** (King) I.M. Turner, **T22** 15; *Eugenia bernardii* King, **H36** 142; *Eugenia inophylla* (DC.) Roxb. var. *bernardii* (King) Ridl., **FMP1** 750, **TFM3** 197; tree; lowland to montane forest; Pn, Pk, Ph, Sl; endemic variety.

143.10.47b **Syzygium inophyllum** DC. var. **inophyllum**. **M34** 188; *Eugenia inophylla* (DC.) Roxb., **FMP1** 750, **H36** 141, **TFM3** 197; tree to 24 m tall; lowland to montane forest; throughout.

143.10.48 **Syzygium jasminifolium** (Ridl.) P. Chantaranothai & J. Parn., **C03** 602, **C04** 78, **T22** 15; *Eugenia jasminifolia* Ridl., **FMP1** 740, **H36** 223, **TFM3** 197; small bushy tree; montane forest; Kl, Tg, Pk, Ph, NS, Ml, Jh.

143.10.49 **Syzygium kemamanense** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia kemamanensis* M.R. Hend., **H36** 93, **TFM3** 198 '*kemamensis*'; tree to 18 m tall; lowland forest; Kl, Tg, Ph, Sl; endemic.

143.10.50a **Syzygium kiahii** (M.R. Hend.) I.M. Turner var. **angustifolium** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia kiahii* M.R. Hend. var. *angustifolia* M.R. Hend., **H36** 116, **TFM3** 198; tree; lowland swamp forest; Jh; endemic.

143.10.50b **Syzygium kiahii** (M.R. Hend.) I.M. Turner var. **kiahii**, **T22** 15; *Eugenia kiahii* M.R. Hend., **H36** 115, **TFM3** 198; tree to 27 m tall; lowland forest including swamps; Tg, Ph, Sl, Jh; endemic.

143.10.51 **Syzygium klossii** (Ridl.) Masam., **T22** 15; *Eugenia klossii* Ridl., **FMP1** 744, **H36** 179, **TFM3** 198; tree; forest; known only from type, Rantau Panjang, Sl; endemic.

143.10.52 **Syzygium koordersianum** (King) I.M. Turner, **T22** 15; *Eugenia koordersiana* King, **FMP1** 732, **H36** 212, **TFM3** 198; tree to 39 m tall; lowland forest; widespread; endemic.

143.10.53 **Syzygium kunstleri** (King) Bahadur & R.C. Gaur, **T22** 15; *Eugenia kunstleri* King, **FMP1** 746, **H36** 209, **TFM3** 199; tree to 30 m tall; lowland and hill forest; Kd, Pn, Pk, Tg, Jh, Sp.

143.10.54 **Syzygium leptostemon** (Korth.) Merr. & L.M. Perry, **M34** 156, **C04** 82, **T22** 15; *Eugenia urceolata* [*non* (Korth.) Cordem.] King, **FMP1** 742; *Eugenia leptostemon* (Korth.) Miq., **H36** 201, **TFM3** 199; tree to 21 m tall; lowland to montane forest; Kd to Sp.

143.10.55 **Syzygium leucoxylum** Korth., **M34** 193, **M33** 398, **T22** 15; *Eugenia leucoxylon* (Korth.) Miq., **H36** 235, **TFM3** 199; *Eugenia verecunda* Duthie, **FMP1** 748 incl. var. major Ridl.; tree to 15 m tall; sea coasts and tidal rivers; Pn, Tg, Pk, Ph, Jh, Sp.

143.10.56 **Syzygium lineatum** (DC.) Merr. & L.M. Perry, **C04** 83, **T22** 15; *Eugenia longiflora* (C. Presl) Fern.-Vill., **H36** 159, **TFM3** 201; *Eugenia lineata* [*non* DC.] (Blume) Duthie, **FMP1** 738; tree to 22 m tall; secondary forests and open country in the lowlands; common throughout.

143.10.57 **Syzygium linoceroides** (King) I.M. Turner, **T22** 15; *Eugenia linoceroidea* King, **FMP1** 749, **H36** 163, **TFM3** 201; tree to 18 m tall; lowland forest; Pk, Sl, Sp; endemic.

143.10.58 **Syzygium maingayi** P. Chantaranothai & J. Parn., **C03** 605, **C04** 84, **T22** 15; *Eugenia oblongifolia* Duthie, **FMP1** 744 incl. var. *parviflora* King, **H36** 184, **TFM3** 204; tree to 40 m tall; lowland and hill forest; Kd, Tg, Pk, Ph, NS, Ml, Sp.

143.10.59 **Syzygium malayanum** (Gagnep.) I.M. Turner, **T22** 15; *Eugenia malayana* Gagnep., **H36** 50, **TFM3** 201; tree to 9 m tall; lowland forest; Kl, Tg; endemic.

143.10.60 **Syzygium millsii** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia millsii* M.R. Hend., **H36** 92, **TFM3** 202; tree to 20 m tall; lowland forest; Kd, Ph, Sl; endemic.

143.10.61 **Syzygium muelleri** (Miq.) Miq., **M36** 186, **C04** 88, **T22** 15; *Eugenia muelleri* Miq., **H36** 186, **TFM3** 202; *Eugenia venulosa* Duthie, **FMP1** 746; tree to 22 m tall; lowlands, often near streams; Pk to Sp.

143.10.62 **Syzygium myrianthum** (King) I.M. Turner, **T22** 15; *Eugenia myriantha* King, **FMP1** 745, **H36** 209, **TFM3** 202; tall tree; once from Pk; endemic.

143.10.63 **Syzygium napiforme** (Koord. & Valeton) Merr. & L.M. Perry, **M34** 183, **T22** 15; *Eugenia napiformis* Koord. & Valeton, **H36** 247, **TFM3** 203; tree to 36 m tall; lowland and hill forest; Tg, Pk, Ph, Sl, NS, Jh.

143.10.64 **Syzygium nemestrinum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia nemestrina* M.R. Hend., **H36** 192, **TFM3** 203; tree to 39 m tall; lowland and hill forest; Tg, Ph, Sp; endemic.

143.10.65 **Syzygium ngadimanianum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia ngadimaniana* M.R. Hend., **H36** 108, **TFM3** 203; tree to 27 m tall; lowland forest; Kl, Jh, Sp; endemic.

143.10.66 **Syzygium nigricans** (King) Merr. & L.M. Perry, **M34** 194, **T22** 15; *Eugenia nigricans* King, **FMP1** 751, **H36** 194, **TFM3** 203; tree to 39 m tall; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

143.10.67 **Syzygium nitidulum** (Ridl.) I.M. Turner, **T22** 15; *Eugenia nitidula* Ridl., **FMP5** 308, **H36** 226, **TFM3** 204; shrub or small tree to 15 m tall; montane forest; Pk, Ph; endemic.

143.10.68a **Syzygium oblatum** (Duthie) Wall. *ex* A.M. Cowan & Cowan var. **laevicaule** (Duthie) P. Chantaranothai & J. Parn., **C04** 91, **T22** 15; *Eugenia oblata auct. non* Roxb., **FMP1** 749 in part; *Eugenia laevicaulis* Duthie, **H36** 138, **TFM3** 199; tree to 21 m tall; lowland forest; Kd, Pn, Kl, Ml, Jh; endemic.

143.10.68b **Syzygium oblatum** (Roxb.) Wall. *ex* A.M. Cowan & Cowan var. **oblatum**, **M34** 187, **T22** 15; *Eugenia oblata* Roxb., **FMP1** 749, **H36** 136, **TFM3** 204; *Eugenia limnaea* Ridl., **FMP1** 729; *Eugenia laxiuscula* Ridl., **FMP1** 750; *Eugenia brantiana* M.R. Hend., **H36** 145; shrub or tree to 24 m tall; lowland forest, mostly near the sea; Kl to Jh.

143.10.69 **Syzygium oreophilum** (Ridl.) I.M. Turner, **T22** 15; *Eugenia oreophila* Ridl., **FMP1** 753, **H36** 61, **TFM3** 205; *Eugenia jugalis* Ridl., **FMP1** 727; shrub to 8 m tall; ridges above 1300 m; Pk, Ph, Sl; endemic.

143.10.70 **Syzygium orites** (Ridl.) I.M. Turner, **T22** 15; *Eugenia orites* Ridl., **FMP5** 308, **H36** 214, **TFM3** 205; shrub or small tree; montane forest; Gg Tapis, Ph; Gg Belumut, Jh; endemic.

143.10.71 **Syzygium pachyphyllum** (Kurz) Merr. & L.M. Perry, **M34** 168, **C04** 92, **T22** 15; *Eugenia pachyphylla* Kurz, **FMP1** 733, **H36** 90, **TFM3** 206; tree to 13 m tall; lowland forest; Kd and Kl to Sp.

143.10.72a **Syzygium pahangense** (Ridl.) I.M. Turner var. **fraseri** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia pahangense* Ridl. var. *fraseri* M.R. Hend., **H36** 102, **TFM3** 206; small tree; montane forest; once from Fraser's Hill, Ph; endemic.

143.10.72b **Syzygium pahangense** (Ridl.) I.M. Turner var. **pahangense**, **T22** 15; *Eugena pahangensis* Ridl. var. *pahangensis*, **FMP1** 751, **H36** 101, **TFM3** 206; small tree; montane forest; Gg Tahan, Ph; endemic.

143.10.73 **Syzygium palembanicum** Miq., **T22** 15; *Eugenia palembanica* (Miq.) Merr., **H36** 85, **TFM3** 206; *Eugenia lepidocarpa* Kurz, **FMP1** 730; *Eugenia selangorensis* Ridl., **FMP1** 730, **H36** 84; tree to 24 m tall; lowland to montane forest; Tg to Sp.

143.10.74 **Syzygium pallidulum** (Ridl.) I.M. Turner, **T22** 15; *Eugenia pallidula* Ridl., **FMP1** 748, **H36** 192, **TFM3** 207; tree to 21 m tall; lowland forest; Pk, Ph; endemic.

143.10.75 **Syzygium papillosum** (Duthie) Merr. & L.M. Perry, **M34** 157, **C04** 93, **T22** 15; *Eugenia papillosa* Duthie, **FMP1** 730, **H36** 77, **TFM3** 207; stilt-rooted tree to 21 m tall; swampy lowland forest; Pk and Tg to Sp.

143.10.76 **Syzygium pauper** (Ridl.) I.M. Turner, **T22** 15; *Eugenia pauper* Ridl., **FMP1** 745, **H36** 178, **TFM3** 207; small tree to 7 m tall; lowland and hill forest; NS, Jh, Sp; endemic.

143.10.77 **Syzygium pearsonianum** (King) I.M. Turner, **T22** 15; *Eugenia pearsoniana* King, **H36** 134, **TFM3** 207; *Eugenia prainiana* King var. *pearsoniana* (King) Ridl., **FMP1** 751; tree to 30 m tall; lowland forest; Pk, Jh; endemic.

143.10.78 **Syzygium pendens** (Duthie) I.M. Turner, **T22** 15; *Eugenia pendens* Duthie, **FMP1** 726, **H36** 71, **TFM3** 209; small tree; lowland forest; Kl and Pk to Sp; endemic.

143.10.79 **Syzygium perakense** (King) I.M. Turner, **T22** 15; *Eugenia perakensis* King, **FMP1** 726, **H36** 51, **TFM3** 209; stilt-rooted tree to 15 m tall; swampy lowland forest, river banks; Pk, Sl; endemic.

143.10.80 **Syzygium pergamentaceum** (King) P. Chantaranothai & J. Parn., **C03** 607, **C04** 94, **T22** 15; *Eugenia pergamentacea* King, **FMP1** 732, **H36** 130, **TFM3** 209; tree to 10 m tall; lowland forest; Kd, Pn, Pk.

143.10.81 **Syzygium perryae** I.M. Turner; *Eugenia benjamina* King, **FMP1** 734, **H34** 152, **TFM3** 184; shrub or small tree; hill and montane forest; Pk; endemic.

143.10.82 **Syzygium plumbeum** (King) I.M. Turner, **T22** 15; *Eugenia plumbea* King, **FMP1** 727, **H36** 63, **TFM3** 209; tree; montane forest at 1200 m; once from Gg Batu Puteh, Pk; endemic.

143.10.83 **Syzygium politum** (King) I.M. Turner, **T22** 15; *Eugenia polita* King, **FMP1** 739, **H36** 221, **TFM3** 210; shrub or small tree sometimes to 25 m tall; lowland and hill forest; Kd, Pn, Pk, Ph, Sl, Ml, Jh; endemic.

143.10.84a **Syzygium polyanthum** (Wight) Walp. var. **polyanthum**, **M34** 155, **M33** 409, **C04** 95, **T22** 15; *Eugenia polyantha* Wight, **FMP1** 742, **H36** 211, **TFM3** 210; *Eugenia balsamea auct. non* Wight, **FMP1** 754; tree to 30 m tall; lowland forest; P. Langkawi & Kl to Sp.

143.10.84b **Syzygium polyanthum** (Wight) Walp. var. **sessile** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia polyantha* Wight var. *sessilis* M.R. Hend., **H36** 212, **TFM3** 210; tree; lowland swamp forest; once from Sg Kayu, Jh; endemic variety.

143.10.85 **Syzygium praestigiosum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia praestigiosa* M.R. Hend., **H36** 158, **TFM3** 210; tree; once from Pk; endemic.

143.10.86 **Syzygium prainianum** (King) P. Chantaranothai & J. Parn., **C03** 608, **T22** 15; *Eugenia prainiana* King, **FMP1** 750, **H36** 133, **TFM3** 210; tree to 48 m tall; lowland forest; Kd, Kl, Pk, Ph, Sl.

143.10.87 **Syzygium porphyrantherum** (Ridl.) I.M. Turner, **T22** 15; *Eugenia porphyranthera* Ridl., **FMP1** 727, **H36** 59, **TFM3** 211 '*prophyranthera*'; small tree; hill forest; Ph, Sl; endemic.

143.10.88 **Syzygium pseudoclaviflorum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia pseudoclaviflora* M.R. Hend., **H36** 252, **TFM3** 211; tree to 7 m tall; lowland forest; base of Gg Tahan, Ph; endemic.

143.10.89 **Syzygium pseudocrenulatum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia pseudocrennlata* M.R. Hend., **H36** 216, **TFM3** 211; *Eugenia crenulata* (*non* Willd.) Duthie, **FMP1** 751; stilt-rooted tree to 24 m tall; lowland forest; Tg, Pk, NS, Ml, Sp; endemic.

143.10.90 **Syzygium pseudoformosum** (King) Merr. & L.M. Perry, **M34** 165, **C04** 98, **T22** 15; *Eugenia pseudoformosa* King, **FMP1** 725 in part, **H36** 69, **TFM3** 211; tree to 10 m tall; lowland to montane forest; Tg and Pk to Sp.

143.10.91 **Syzygium pseudomolle** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia pseudomollis* M.R. Hend., **H36** 75, **TFM3** 212; *Eugenia mollis* (*non* Willd. *ex* Berg.) King, **FMP1** 728; shrub or small tree; lowland forest; Pk.

143.10.92 **Syzygium pulaiense** I.M. Turner, **T22** 15; *Eugenia johorensis* Ridl., **FMP1** 725, **H36** 73, **TFM3** 197; tree; once from Gg Pulai, Jh; endemic.

143.10.93 **Syzygium pustulatum** (Duthie) Merr., **M33** 421, **T22** 15; *Eugenia pustulata* Duthie, **FMP1** 736, **H36** 188, **TFM3** 212; tree to 24 m tall; lowland forest; Kd to Sp.

143.10.94 **Syzygium pycnanthum** Merr. & L.M. Perry, **M34** 168, **C04** 100, **T22** 15; *Eugenia densiflora* (Blume) Miq., **FMP1** 728, **H36** 78, **TFM3** 189,; tree to 21 m tall; lowland forests, seashores; Pn and Tg to Sp.

143.10.95 **Syzygium pyrifolium** (Blume) DC., **M34** 182, **C04** 100, **T22** 15; *Eugenia pyrifolia* [*non* Desv.] (Blume) Duthie, **FMP1** 738; *Eugenia tumida* Duthie, **H36** 161, **TFM3** 221; tree to 18 m tall; lowlands; Kd to Sp.

143.10.96 **Syzygium quadratum** (King) I.M. Turner, **T22** 15; *Eugenia quadrata* King, **FMP1** 730, **H36** 55, **TFM3** 214; tree to 10 m tall; lowland forest; once from near Larut, Pk; endemic.

143.10.97 **Syzygium quadribracteatum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia quadribracteata* M.R. Hend., **H36** 166, **TFM3** 214; tree to 21 m tall; lowland forest; Pn, Kl, Tg, Pk, Ph, Jh; endemic.

143.10.98 **Syzygium rhomboideum** (Ridl.) I.M. Turner, **T22** 15; *Eugenia rhomboidea* Ridl., **FMP1** 753, **H36** 80, **TFM3** 214; shrub or small tree to 12 m tall; montane forest at 1300 m; only known from Gg Mengkuang, Sl; endemic.

143.10.99 **Syzygium ridleyi** (King) P. Chantaranothai & J. Parn., **C03** 608, **C04** 102, **T22** 15; *Eugenia ridleyi* King, **FMP1** 735, **H36** 125, **TFM3** 214; tree to 30 m tall; lowland forest; Kd to Sp.

143.10.100 **Syzygium rostadonis** (Ridl.) I.M. Turner, **T22** 15; *Eugenia rostadonis* Ridl., **FMP1** 727, **H36** 65, **TFM3** 215; ?tree; lowland forest; once from Bundi, Tg; endemic.

143.10.101a **Syzygium rugosum** Korth. var. **cordatum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia rugosa* (Korth.) Merr. var. *cordata* M.R. Hend., **H36** 246, **TFM3** 215; tree; montane forest; Kl, Ph, Sl; endemic variety.

143.10.101b **Syzygium rugosum** Korth. var. **rugosum**, **M34** 185; *Eugenia rugosa* (Korth.) Merr., **H36** 244 incl. var. *saxitana* (Ridl.) M.R. Hend., **TFM3** 215; *Eugenia goodenovii* King, **FMP1** 731 in part; *Eugenia johorensis* (*non* Ridl.) Ridl., **FMP5** 308; tree to 38 m tall; lowland and hill forest; Ps, Kd, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

143.10.102 **Syzygium salictoides** (Ridl.) I.M. Turner, **T22** 15; *Eugenia salictoides* Ridl., **FMP1** 728, **H36** 82, **TFM3** 215; rheophytic shrub; in and near streams; Tg, Ph; endemic.

143.10.103 **Syzygium scalarinerve** (King) I.M. Turner, **T22** 15; *Eugenia scalarinervis* King, **H36** 57, **TFM3** 216; tree to 10 m tall; lowland forest; Pk; endemic.

143.10.104a **Syzygium scortechinii** (King) P. Chantaranothai & J. Parn. var. **cuneatum** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia scortechinii* King var. *cuneata* M.R. Hend., **H36** 67, **TFM3** 216; lowland forest; Tg, Ph, Sl, NS, Jh; endemic variety.

143.10.104b **Syzygium scortechinii** (King) P. Chantaranothai & J. Parn. var. **scortechinii**, **C03** 609, **C04** 107, **T22** 15; *Eugenia scortechinii* King, **FMP1** 725 incl. var. *parvifolia* King, **H36** 66, **TFM3** 216; tree to 16 m tall; lowland forest; Pn to Jh.

143.10.105 **Syzygium setosum** (King) I.M. Turner, **T22** 15; *Eugenia setosa* King, **FMP1** 755, **H36** 176, **TFM3** 216; shrub or small tree; peatswamp forest mostly; Pk, Sl; endemic.

143.10.106 **Syzygium siamense** (Craib) P. Chantaranothai & J. Parn., **C03** 609, **C04** 108, **T22** 15; *Eugenia siamensis* Craib, **FMP1** 726, **H36** 59, **TFM3** 217; shrub or small tree to 15 m tall; lowland forest; north Malaya.

143.10.107 **Syzygium singaporense** (King) Airy Shaw, **A02** 124, **T22** 15; *Aphanomyrtus rostrata* Miq., **M32** 109; *Pseudoeugenia singaporensis* King, **FMP1** 755, **TFM3** 250; tree to 27 m tall; lowland forest; Kd, Pk, Ph, Sl, Jh, Sp.

143.10.108 **Syzygium skiophilum** (Duthie) Airy Shaw, **A02** 124, **T22** 15; *Aphanomyrtus skiophila* (Duthie) Valeton, **M32** 110; *Pseudoeugenia perakiana* Scort., **FMP1** 755, **TFM3** 250; tree to 5 m tall; lowland to montane forest; Pn, Kl, Pk, Ph.

143.10.109 **Syzygium spissifolium** (Ridl.) I.M. Turner, **T22** 15; *Eugenia spissifolia* Ridl., **FMP1** 753, **H36** 235, **TFM3** 217; shrub; montane forest at 1500 m; once from Gg Mengkuang, Sl; endemic.

143.10.110 **Syzygium stapfianum** (King) I.M. Turner, **T22** 15; *Eugenia stapfiana* King, **FMP1** 753, **H36** 228, **TFM3** 217; shrub or small tree to 8 m tall; montane forest; Kl, Tg, Pk, Ph, Sl; endemic.

143.10.111a **Syzygium subdecussatum** (Wall. *ex* Duthie) I.M. Turner var. **montanum** (King) I.M. Turner, **T22** 15; *Eugenia subdecussata* Duthie var. *montana* King, **FMP1** 752, **H36** 97, **TFM3** 218; montane forest, rarely in the lowlands; throughout.

143.10.111b **Syzygium subdecussatum** (Wall. *ex* Duthie) I.M. Turner var. **subdecussatum**, **T22** 15; *Eugenia subdecussata* Duthie, **FMP1** 752 incl. var. *colorata* King, **H36** 95, **TFM3** 218; tree to 30 m tall; lowland forest and rocky shores; common throughout.

143.10.112 **Syzygium subhorizontale** (King) P. Chantaranothai & J. Parn., **C03** 590, **T22** 15; *Eugenia subhorizontalis* King, **FMP1** 733, **H36** 124, **TFM3** 218; small tree; lowland forest; Pk, NS.

143.10.113 **Syzygium subrufum** (King) Masam., **C04** 110, **T22** 15; *Eugenia subrufa* King, **FMP1** 733 incl. var. *robusta* King; tree.

143.10.114 **Syzygium swettenhamianum** (King) I.M. Turner, **T22** 15; *Eugenia swettenhamiana* King, **FMP1** 755, **H36** 124, **TFM3** 218; tree to 21 m tall; once from near Gg Pondok, Pk; endemic.

143.10.115 **Syzygium syzygioides** (Miq.) Merr. & L.M. Perry; **M34** 171, **C04** 111; *Eugenia syzygioides* (Miq.) M.R. Hend., **H36** 154, **TFM3** 219; *Eugenia cymosa auct. non* Lam., **FMP1** 737 in part; *Eugenia pseudosyzygioides* M.R. Hend., **H36** 157; tree to 30 m tall; lowlands, often near sandy coasts; common throughout.

143.10.116 **Syzygium tahanense** (Ridl.) I.M. Turner, **T22** 15; *Eugenia tahanensis* Ridl., **FMP1** 752, **H36** 102, **TFM3** 219; shrub; high montane forest; Gg Tahan, Ph; endemic.

143.10.117 **Syzygium taipingense** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia taipingensis* M.R. Hend., **H36** 193, **TFM3** 219; shrub or small tree; lowland forest; only knwon from near Taiping, Pk; endemic.

143.10.118 **Syzygium tectum** (King) I.M. Turner, **T22** 15; *Eugenia tecta* King, **FMP1** 739, **H36** 223, **TFM3** 220; tree; montane forest; Pk, Ph; endemic.

143.10.119 **Syzygium tekuense** (M.R. Hend.) I.M. Turner, **T22** 15; *Eugenia tekuensis* M.R. Hend., **H36** 48, **TFM3** 220; *Eugenia trunciflora* (*non* G. Don) Ridl., **FMP1** 724; small cauliflorous tree to 13 m tall; lowland forest; known only from Kuala Teku, Ph; endemic.

143.10.120 **Syzygium tenuifolium** (Ridl.) Airy Shaw, **A02** 124, **T22** 15; *Aphanomyrtus tenuifolia* (Ridl.) Merr., **M32** 110; *Pseudoengenia tenuifolia* Ridl., **TFM3** 250; tree to 6 m tall; lowland forest; once each from Kemasul F.R., Ph, and Sg Lalang F.R., Sl; endemic.

143.10.121a **Syzygium tetrapterum** (Miq.) P. Chantaranothai & J. Parn. var. **pseudotetrapterum** (King) I.M. Turner, **T22** 15; *Eugenia pseudotetraptera* King, **FMP1** 739; *Engenia tetraptera* (Miq.) M.R. Hend. var. *pseudotetraptera* (King) M.R. Hend., **H36** 220, **TFM3** 220; *Syzygium pseudotetrapterum* (King) P. Chantaranothai & J. Parn., **C03** 590; tree to 9 m tall; mostly in the mountains; Ph, Jh.

143.10.121b **Syzygium tetrapterum** (Miq.) P. Chantaranothai & J. Parn. var. **tetrapterum**, **C03** 590; *Eugenia tetraptera* (Miq.) M.R. Hend., **H36** 218, **TFM3** 220; shrub; lowland forest; Sg Buloh F.R., Sl.

143.10.122 **Syzygium thumra** (Roxb.) Merr. & L.M. Perry var. **penangianum** (King) I.M. Turner; *Engenia thumra* Roxb. var. *penangiana* King, **FMP1** 734, **H34** 121, TFM3 220; tree; hill forest; twice from Penang Hill; endemic variety.

143.10.123 **Syzygium tiumanense** (Ridl.) I.M. Turner, **T22** 15; *Engenia tinmanensis* Ridl., **FMP1** 725, **H36** 70, **TFM3** 221; large tree; lowland forest; twice from P. Tioman; endemic.

143.10.124 **Syzygium urophyllum** Merr., **M33** 369; *Eugenia candata* King, **FMP1** 740, **H36** 148, **TFM3** 185; *Syzygium enervosum* P. Chantaranothai & J. Parn. *nom. superfl.*, **C03** 596; shrub or small tree to 12 m tall; hill and montane forest, often on high ridges; Pn, Tg, Pk, Ph, Sl; endemic.

143.10.125 **Syzygium valdevenosum** (Duthie) Merr. & L.M. Perry, **M34** 182, **T22** 15; *Engenia valdevenosa* Duthie, **FMP1** 743, **H36** 180, **TFM3** 221; *Engenia alata* Ridl., **FMP1** 743; tree to 9 m tall; lowland and hill forest; Pn to Jh.

143.10.126 **Syzygium variolosum** (King) P. Chantaranothai & J. Parn., **C03** 590, **T22** 15; *Engenia variolosa* King, **FMP1** 736, **H36** 105, **TFM3** 221; shrub or small tree to 6 m tall; lowland forest; Pk, Sl; endemic.

143.10.127 **Syzygium viridescens** (Ridl.) I.M. Turner, **T22** 15; *Engenia viridescens* Ridl., **FMP1** 752, **H36** 97, **TFM3** 222; shrub; montane forest at 1500 m; only known from Gg Tahan, Ph; endemic.

143.10.128 **Syzygium wrayi** (King) I.M. Turner, **T22** 15; *Eugenia wrayi* King, **FMP1** 753, **H36** 98, **TFM3** 222; shrub or small tree; montane forest above 1500 m; Pk, Ph, Sl; endemic.

143.10.129 **Syzygium zeylanicum** (L.) DC., **M34** 159, **C04** 118, **T22** 15; *Eugenia zeylanica* (*non* Willd.) Wight, **FMP1** 738; *Eugenia spicata* Lam., **H36** 231 incl. var. *tenuiramis* (Miq.) M.R. Hend., **TFM3** 217; *Eugenia longicaudata* Ridl., **FMP1** 752; shrub or tree to 18 m tall; sea shores and river banks, rarely in the mountains; Kd and Tg to Sp.

143.10.130 **Eugenia sp. 1**, **TFM3** 224; tree to 27 m tall; lowland forest; Jh; ?endemic.

143.10.131 **Eugenia sp. 2**, **TFM3** 224; tree to 15 m tall; lowland forest; once from Jh; ?endemic.

143.10.132 **Eugenia sp. 3**, **TFM3** 224; tree to 27 m tall; bamboo forest; once from Ps; ?endemic.

143.10.133 **Eugenia sp. 4**, **TFM3** 224; tree to 27 m tall; lowland and hill forest; Tg, Ph, Sl; ?endemic.

143.10.134 **Eugenia sp. 5**, **TFM3** 225; tree to 12 m tall; hill forest; Sl, Jh; ?endemic.

143.10.135 **Eugenia sp. 6**, **TFM3** 225; ?tree; once from Sepang, Sl; ?endemic.

143.10.136 **Eugenia sp. 7**, **TFM3** 225; tree to 27 m tall; lowland forest; Pk, Sl; ?endemic.

143.10.137 **Eugenia sp. 8**, **TFM3** 225; tree to 48 m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp; ?endemic.

143.10.138 **Eugenia sp. 9**, **TFM3** 227; tree to 30 m tall; lowland forest; Kd, Kl, Pk, Ph; ?endemic.

143.10.139 **Eugenia sp. 10**, **TFM3** 227; tree to 10 m tall; lowland and hill forest; Kl, Tg, Ph, Sl, NS, Ml.

143.10.140 **Eugenia sp. 11**, **TFM3** 227; tree to 24 m tall; lowland forest; twice from Tg; ?endemic.

143.10.141 **Eugenia sp. 12**, **TFM3** 227; tree to 18 m tall; hill and montane forest; Kl, Tg, Ph, Ml; ?endemic.

143.10.142 **Eugenia sp. 13**, **TFM3** 229; tree to 21 m tall; lowland forest; once from Ulu Besut, Tg; ?endemic.

143.10.143 **Eugenia sp. 14**, **TFM3** 229; stilt-rooted tree to 21 m tall; lowland swamp forest; Sl, Jh; ?endemic.

143.10.144 **Eugenia sp. 15**, **TFM3** 229; tree to 27 m tall; hill forest at 1000 m; once from Gg Mandi Angin, Tg; ?endemic.

143.10.145 **Eugenia sp. 16**, **TFM3** 229; tree to 24 m tall; lowland forest; Kd, Jh; ?endemic.

143.10.146 **Eugenia sp. 17**, **TFM3** 231; tree to 30 m tall; lowland forest; Kd, Tg, Jh; ?endemic.

143.10.147 **Eugenia sp. 18**, **TFM3** 231; small tree; hill and montane forest over 700 m; Gg Mandi Angin, Tg; Fraser's Hill, Ph; ?endemic.

143.10.148 **Eugenia sp. 19**, **TFM3** 231; tree to 18 m tall; lowland forest; Kd, Ph; ?endemic.

143.10.149 **Eugenia sp. 20**, **TFM3** 231; tree to 14 m tall; montane forest at 1700 m; Cameron Highlands, Ph; ?endemic.

143.10.150 **Eugenia sp. 21**, **TFM3** 231; tree to 18 m tall; lowland forest; once from Ulu Muda FR, Kd; ?endemic.

143.10.151 **Eugenia sp. 22**, **TFM3** 233; tree to 24 m tall; lowland forest; Tg, Jh; ?endemic.

143.10.152 **Eugenia sp. 23**, **TFM3** 233; tree to 27 m tall; montane forest at 1000–1800 m; Cameron Highlands and Fraser's Hill, Ph; ?endemic.

143.10.153 **Eugenia sp. 24**, **TFM3** 233; tree to 21 m tall; lowland forest; Ph, Jh; ?endemic.

143.10.154 **Eugenia sp. 25**, **TFM3** 233; shrub about 2.5 m tall; montane forest at 1500 m; only known from Gg Sagi, Kl; ?endemic.

144.10.155 **Eugenia sp. 26**, **TFM3** 233; tree to 21 m tall; lowland forest; once from Mersing, Jh; ?endemic.

143.10.156 **Eugenia sp. 27**, **TFM3** 234; shrub to 6 m tall; lowland forest; once from Kluang FR, Jh; ?endemic.

143.10.157 **Eugenia sp. 28**, **TFM3** 234; tree to 21 m tall; hill forest; Ph, N; ?endemic.

143.10.158 **Eugenia sp. 29**, **TFM3** 234; tree to 30 m tall; lowland forest; Tg, Ph; ?endemic.

143.10.159 **Eugenia sp. 30**, **TFM3** 234; small tree; lowland forest; once from Tasek Bera, Ph; ?endemic.

143.10.160 **Eugenia sp. 31**, **TFM3** 234; tree to 5 m tall; montane forest at 1200 m; Gg Padang, Tg; ?endemic.

143.10.161 **Eugenia sp. 32**, **TFM3** 236; tree to 21 m tall; lowland forest; once from Tg; ?endemic.

143.10.162 **Eugenia sp. 33**, **TFM3** 236; tree to 42 m tall; lowland forest; Panti FR, Jh; ?endemic.

143.10.163 **Eugenia sp. 34**, **TFM3** 236; tree; lowland forest; Tg; ?endemic.

143.10.164 **Eugenia sp. 35**, **TFM3** 236; tree to 30 m tall; lowland forest; Jh; ?endemic.

143.10.165 **Eugenia sp. 36**, **TFM3** 236; tree to 28 m tall; lowland forest; Pk, Ph, Sl, Jh; ?endemic.

143.10.166 **Eugenia sp. 37**, **TFM3** 237; tree to 28 m tall; lowland and hill forest; Ph, Jh; ?endemic.

143.10.167 **Eugenia sp. 38**, **TFM3** 237; large tree; hill forest above 1000 m; twice from Gg Inas, Pk; ?endemic.

143.10.168 **Eugenia sp. 39**, **TFM3** 237; tree to 36 m tall; lowland forest; Jh, Sp; ?endemic.

143.10.169 **Eugenia sp. 40**, **TFM3** 237; tree to 33 m tall; lowlands; P. Langkawi, Kd; ?endemic.

143.10.170 **Eugenia sp. 41**, **TFM3** 237; tree; montane forest; Kl, Ph; ?endemic.

143.10.171 **Eugenia sp. 42**, **TFM3** 238; tree to 48 m tall; lowland and montane forest; Ph, Jh; ?endemic.

143.10.172 **Eugenia sp. 43**, **TFM3** 238; tree to 9 m tall; montane forest at 1200 m; once from Gg Lawit, Tg; ?endemic.

143.10.173 **Eugenia sp. 44**, **TFM3** 238; tree to 36 m tall; swampy lowland forest; Sl, Jh; ?endemic.

143.10.174 **Eugenia sp. 45**, **TFM3** 238; stilt-rooted tree to 18 m tall; peat swamp forest; only known from Klang, Sl; ?endemic.

143.10.175 **Eugenia sp. 46**, **TFM3** 240; tree to 27 m tall; montane forest at 1700 m; once from Cameron Highlands, Ph; ?endemic.

143.10.176 **Eugenia sp. 47**, **TFM3** 240; tree to 15 m tall; lowland forest; once from Labis FR, Jh; ?endemic.

143.10.177 **Eugenia sp. 48**, **TFM3** 240; tree to 24 m tall; lowland forest; once from Cabang Tongkat F.R., Kl; ?endemic.

143.10.178 **Eugenia sp. 49**, **TFM3** 240; shrub to 3 m tall; montane forest at 900 m; only known from the summit of Gg Belumut, Jh; ?endemic.

143.10.179 **Eugenia sp. 50**, **TFM3** 240; tree to 15 m tall; montane forest at 1200 m; Gg Padang, Tg; Fraser's Hill, Ph; ?endemic.

144.10.180 **Eugenia sp. 51**, **TFM3** 240; tree to 27 m tall; once from Gg Arong F.R., Ph; ?endemic.

143.10.181 **Eugenia sp. 52**, **TFM3** 241; tree to 21 m tall; hill forest at 600 m; once from Ph; ?endemic.

143.10.182 **Eugenia sp. 53**, **TFM3** 241; tree to 36 m tall; once from Jh; ?endemic.

143.10.183 **Eugenia sp. 54**, **TFM3** 241; tree to 30 m tall; lowland forest; once each from Pk, Sl and Jh; ?endemic.

143.10.184 **Eugenia sp. 55**, **TFM3** 241; ?tree; montane forest at 1200 m; once from Gg Padang, Tg; ?endemic.

143.10.185 **Eugenia sp. 56**, **TFM3** 241; tree to 6 m tall; once from Pk; ?endemic.

143.10.186 **Eugenia sp. 57**, **TFM3** 242; tree to 18 m tall; lowland forest; once from Sg Lallang F.R., Sl; ?endemic.

143.10.187 **Eugenia sp. 58**, **TFM3** 242; large tree; lowland forest; once from Lepar Hill F.R., Ph; ?endemic.

143.10.188 **Eugenia sp. 59**, **TFM3** 242; tree to 18 m tall; once from Tg; ?endemic.

144.10.189 **Eugenia sp. 60**, **TFM3** 242; tree to 12 m tall; coastal forest; once from Jh; ?endemic.

143.10.190 **Eugenia sp. 61**, **TFM3** 242; tree to 12 m tall; montane forest at 1300 m; once from Cameron Highlands, Ph; ?endemic.

143.10.191 **Eugenia sp. 62**, **TFM3** 242; tree to 21 m tall; lowland forest; once from Gg Panti, Jh; ?endemic.

143.10.192 **Eugenia sp. 63**, **TFM3** 244; ?tree; montane forest at 1800 m; once from Gg Berembun, Ph; ?endemic.

143.10.193 **Eugenia sp. 64**, **TFM3** 244; shrub about 2 m tall; montane forest at 1500 m; once from Gg Mengkuang, Sl; ?endemic.

143.10.194 **Eugenia sp. 65**, **TFM3** 244; tree to 3 m tall; hill forest at about 1000 m; once from Labis FR, Jh; ?endemic.

143.10.195 **Eugenia sp. 66**, **TFM3** 244; tree about 12 m tall; lowland forest; Sl; ?endemic.

143.11.1 **Tristaniopsis fruticosa** (Ridl.) Peter G. Wilson & J.T. Waterh., **W21** 439; *Tristania fruticosa* Ridl., **FMP1** 715, **TFM3** 252; shrub to 1 m tall; montane forest above 1350 m; Gg Tahan, Ph; endemic.

143.11.2 **Tristaniopsis merguensis** (Griff.) Peter G. Wilson & J.T. Waterh., **W21** 439; *Tristania merguensis* Griff., **FMP1** 715, **TFM3** 252; *Tristania subauriculata* King, **FMP1** 714; *Tristania maingayi* Duthie, **FMP1** 715; tree to 21 m tall; rocky coasts to mountains; widespread.

143.11.3 **Tristaniopsis obovata** (R.Br.) Peter G. Wilson & J.T. Waterh., **W21** 439; *Tristania spathulata* Ridl., **FMP1** 715; *Tristania obovata* R.Br., **TFM3** 253; tree to 45 m tall; lowlands; Kd, Tg, Jh, Sp.

143.11.4 **Tristaniopsis pontianensis** (M.R. Hend.) Peter G. Wilson & J.T. Waterh., **W21** 440; *Tristania pontianensis* M.R. Hend., **TFM3** 253; tree to 27 m tall; South Jh; endemic.

143.11.5 **Tristaniopsis razakiana** (Kochummen) Peter G. Wilson & J.T. Waterh., **W21** 440; *Tristania razakiana* Kochummen, **TFM3** 253; tree to 21 m tall; montane forest; Pk, Ph; endemic.

143.11.6 **Tristaniopsis whiteana** (Griff.) Peter G. Wilson & J.T. Waterh., **W21** 440; *Tristania whiteana* Griff., **FMP1** 716, **TFM3** 253; tree to 24 m tall; river banks in the lowlands; widespread.

144. NELUMBONACEAE

144.1.1 **Nelumbo nucifera** Gaertn., **N11** 197; *Nelumbium speciosum* Willd. *nom. illeg.*, **FMP1** 118; large rhizomatous aquatic herb, leaves emergent; pools, ditches, much cultivated, dubiously native; widespread.

145. NEPENTHACEAE

145.1.1 **Nepenthes albomarginata** Lobb *ex* Lindl., **FMP3** 21, **D02** 262; slender climber; hills and mountains; Kd, Pn, Pk, Ml.

145.1.2 **Nepenthes ampullaria** Jack, **FMP3** 21, **D02** 365; climber; secondary forest, forest margins; Pn, Pk, Ml, Jh, Sp.

145.1.3 **Nepenthes gracilis** Korth., **FMP3** 24 incl. var. *arenaria* Ridl., **D02** 290; slender climber to 6 m long; secondary forest, forest margins in the lowlands; Kd, Pn, Tg, Pk, Ph, NS, Ml, Jh, Sp.

145.1.4 **Nepenthes gracillima** Ridl., **FMP3** 22 incl. var. *major* Ridl., **D02** 296; *Nepenthes alba* Ridl., **FMP3** 22; *Nepenthes ramispina* Ridl., **FMP3** 22; climber; mountain ridges at 600–2100 m; Kl, Ph, Sl; endemic.

145.1.5 **Nepenthes hookerana** Lindl., **D02** 309; climber; secondary forest; Sp.

145.1.6 **Nepenthes macfarlanei** Hemsl., **FMP3** 24, **D02** 323; stout climber; mountains at 1200–1600 m; Pk, Ph, Sl; endemic.

145.1.7 **Nepenthes mirabilis** Druce, **D02** 330; *Nepenthes phyllamphora* Willd., **FMP3** 25; climber to 7 m long; lowlands; P. Langkawi, Kd, Pn, Pk, Ml, ?Sp.

145.1.8 **Nepenthes rafflesiana** Jack, **FMP3** 24, **D02** 357; stout climber to 4 m or more long; forest margins in lowlands and hills; Pk, Ml, Jh, Sp.

145.1.9 **Nepenthes sanguinea** Lindl., **FMP3** 23, **D02** 366; climber; mountains at 900–1300 m; Pk, Ph, Sl, Ml; endemic.

145.1.10 **Nepenthes trichocarpa** Miq., **D02** 389; climber; open places; widespread.

Danser cites the following hybrids *N. gracillima x macfarlanei* [**D02** 299] {Gg Batu Puteh, Pk, Gg Tahan, Ph}, *N. macfarlanei x sanguinea* [**D02** 324] {Kl, Ph, Sl, Ml}.

146. NYCTAGINACEAE

146.1.1 **Boerhavia chinensis** (L.) Asch. & Schweinf., **FMi6** 455, **TFM2** 297; *Boerhavia repanda* Willd., FMP3 2; erect herb to 1 m tall; on limestone; Ps.

146.1.2 **Boerhavia diffusa** L., **FMP3** 1, **FMi6** 454, **TFM2** 297; creeping or erect herb to 1 m tall; dry sandy open places; widespread.

146.1.3 **Boerhavia erecta** L., **FMi6** 454, **TFM2** 297, **M47** 366; erect herb to 80 cm tall; roadsides, open sandy places; Sp.

146.2.1 **Pisonia aculeata** L., **FMP3** 3, **FMi6** 467, **TFM2** 298; thorny scrambling liana reaching to 20 m; on limestone; Ps, P. Langkawi.

146.2.2 **Pisonia grandis** R.Br., **FMi6** 464, **TFM2** 298; shrub or tree to 30 m tall; coastal; both coasts and offshore islands.

146.2.3 **Pisonia umbellifera** (J.R. Forst. & G. Forst.) Seem., **FMi6** 460, **TFM2** 298; *Pisonia excelsa* Blume, **FMP3** 3; shrub or tree to 28 m tall; bases of limestone hills; Pk, Ph.

147. NYMPHAEACEAE

147.1.1 **Barclaya kunstleri** (King) Ridl., **FMP1** 117; *Hydrostemma kunstleri* (King) B.C. Stone, **S56** 71; aquatic herb; shallow water; Pk, Ph, Sl, Jh, Sp.

147.1.2 **Barclaya longifolia** Wall., **FMP1** 118; *Hydrostemma longifolium* (Wall.) Mabb., **M04** 68; small aquatic herb; fast-flowing streams; P. Langkawi.

147.1.3 **Barclaya motleyi** Hook.*f*., **FMP1** 116; *Hydrostemma motleyi* (Hook.*f*.) Mabb., **M04** 68; small aquatic herb; small slow-flowing streams in lowland forest; Pn, Ph, Ml, Sp.

147.2.1 **Nymphaea pubescens** Willd., **M42** 431; *Nymphaea lotus* L., **FMP1** 116; aquatic rhizomatous herb with floating leaves; pools and ditches, often cultivated; Ml.

147.2.2 **Nymphaea nouchali** Burm.*f*., **N11** 198, **M42** 430; *Nymphaea stellata* Willd., **FMP1** 116; aquatic rhizomatous herb with floating leaves; pools and ditches; widespread.

148. OCHNACEAE

148.1.1 **Brackenridgea hookeri** (Planch.) A. Gray, **FMi7** 102, **TFM3** 256; *Gomphia hookeri* Planch., **FMP1** 366; tree to 27 m tall; lowland and hill forest to 1000 m; throughout.

148.1.2 **Brackenridgea palustris** Bartell., **FMi7** 102, **TFM3** 256; *Gomphia corymbosa* (King) Ridl., **FMP1** 367; tree to 9 m tall; swampy lowland forest and montane forest; Kd, Pk, Ph, Sl, Ml, Jh, Sp.

148.2.1 **Campylospermum serratum** (Gaertn.) Bittrich & M.C.E. Amaral, **B20** 92; *Gomphia microphylla* Ridl., **FMP1** 365; *Gomphia sumatrana* Jack, **FMP1** 365; *Gomphia oblongifolia* Ridl., **FMP5** 296; *Gomphia serrata* (Gaertn.) Kanis, **FMi7** 105, **TFM3** 258; tree to 25 m tall; lowland and hill forest to 1000 m, common near the sea; throughout.

148.3.1 **Euthemis leucocarpa** Jack, **FMP1** 368, **FMi7** 108, **TFM3** 257; shrub to 2 m tall; lowland swamps, ridges and mountain sides to 1000 m; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

148.3.2 **Euthemis minor** Jack, **FMP1** 368, **FMi7** 108, **TFM3** 257; prostrate shrub; sandy forest; Chua Chu Kang, Sp.

148.4.1 **Ochna integerrima** (Lour.) Merr., **FMi7** 99, **TFM3** 260; *Ochna grandis* Ridl., **FMP1** 365; shrub or small tree to 12 m tall; sandy beaches, swampy places; Ps, P. Langkawi, Kd.

149.5.1 **Sauvagesia serrata** (Korth.) Sastre, **S01** 18; *Neckia malayana* Ridl., **FMP1** 134; *Neckia serrata* Korth., **FMi7** 110, **TFM3** 260; shrub to 1 m tall; damp shady places in lowland and hill forest; Tg, Ph, Jh.

149. OLACACEAE

149.1.1 **Anacolosa frutescens** (Blume) Blume, **FMi10** 25; *Anacolosa heptandra* Maingay *ex* Mast., **FMP1** 425, **TFM2** 301; small tree to 15 m tall; lowland and hill forest to 600 m; Kd, Ph, Sl, NS, Ml, Jh, Sp.

149.2.1 **Erythropalum scandens** Blume, **FMP1** 436, **TFM2** 299, **FMi10** 17; scandent shrub or liana to 10 m tall; lowland and hill forest; widespread.

149.3.1 **Harmandia mekongensis** Pierre *ex* Baill., **FMi10** 9; *Harmandia kunstleri* King, **FMP1** 421, **TFM2** 301; tree to 21 m tall; lowland forest to 240 m; Tg, Ph, Pk, Sl, NS, Ml.

149.4.1 **Ochanostachys amentacea** Mast., **FMP1** 422, **TFM2** 302, **FMi10** 14; tree to 30 m tall; lowland and hill forest to 900 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

149.5.1 **Olax imbricata** Roxb., **FMP1** 421, **TFM2** 300, **FMi10** 8; unarmed climbing shrub; lowland forest; scattered.

149.5.2 **Olax psittacorum** (Willd.) Vahl, **FMi10** 717; *Olax scandens* Roxb., **FMP1** 421, **TFM2** 300, **FMi10** 7; prickly scandent shrub; open sandy country; widespread.

149.6.1 **Scorodocarpus borneensis** (Baill.) Becc., **FMP1** 424, **TFM2** 303, **FMi10** 15; pungent tree to 36 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

149.7.1 **Strombosia ceylanica** Gardn., **FMi10** 22; *Strombosia multiflora* King, **FMP1** 425, **TFM2** 306; *Strombosia rotundifolia* King, **FMP1** 425; *Strombosia maingayi* (Mast.) Whitmore, **TFM2** 306; tree to 20 m tall; lowland forest; widespread.

149.7.2 **Strombosia javanica** Blume, **FMP1** 425, **TFM2** 306, **FMi10** 21; tree to 24 m tall; lowland forest; Kd, Pn, Kl, Pk, Ph, Sl, NS, Jh, Sp.

149.7.3 **Strombosia sp.** A, **TFM2** 307; shrub; lowland forest; Tg, Ph, Sl; ?endemic.

149.8.1 **Ximenia americana** L., **FMP1** 424, **TFM2** 300, **FMi10** 11; sprawling shrub or small tree to 10 m tall; sandy shores; common on west coast, rare on east.

150. OLEACEAE

150.1.1 **Chionanthus calcicolus** (Kerr) Kiew, **K23** 265, **TFM4** 287; shrub or small tree to 5 m tall; on limestone; P. Langkawi, Kl, Pk.

150.1.2 **Chionanthus callophylus** Blume, **K25** 210, **TFM4** 287; *Linociera paludosa* King & Gamble, **FMP2** 316; *Olea platycarpa* King & Gamble, **FMP2** 319; *Chionanthus platycarpus* (King & Gamble) Kiew, **K23** 272; tree to 25 m tall; lowland forest including swamps; Ph, Sl, Jh.

150.1.3 **Chionanthus caudifolius** (Ridl.) Kiew, **K24** 266, **TFM4** 287; *Linociera caudifolia* Ridl., **FMP2** 317; tree to 13 m tall; montane forest at 1200–1600 m; Pk, Ph; endemic.

150.1.4 **Chionanthus curvicarpus** Kiew, **K25** 211, **TFM4** 287; tree to 23 m tall; lowland forest; once from Sg Kayu, Jh.

150.1.5 **Chionanthus evenius** (Stapf) Kiew, **K24** 268, **TFM4** 288; tree to 50 m tall; lowland swamp forest; Pk, Sl, Jh.

150.1.6 **Chionanthus grandifolius** (Elmer) Kiew, **K25** 210, **TFM4** 287; *Chionanthus macrocarpus auct. non* Blume, **K24** 271; tree to 7 m tall; lowland forest; once from Batu Biwa, Tg.

150.1.7 **Chionanthus lancifolius** (Ridl.) Kiew, **K24** 269, **TFM4** 287; *Linociera lancifolia* Ridl., **FMP2** 317; *Linociera parvifolia* Ridl., **FMP2** 317; shrub or tree to 8 m tall; montane forest at 1500–1700 m; Kl, Pk, Ph, Sl; endemic.

150.1.8 **Chionanthus laxiflorus** Blume, **K24** 270, **TFM4** 287; tree to 4 m tall; lowlands and mountains; Ph, Jh (thrice in all).

150.1.9 **Chionanthus lucens** Kiew, **W30** 268; small tree; Gg Janing, Jh.

150.1.10 **Chionanthus macrocarpus** Blume, **K25** 209, **TFM4** 288; *Linociera insignis* (Miq.) C.B. Clarke, **FMP2** 316 in part; *Chionanthus elaeocarpus* (Stapf) Kiew, **K24** 267; tree to 42 m tall; lowland and hill forest to 1000 m; Tg, Ph, Jh, Sp.

150.1.11 **Chionanthus ramiflorus** Roxb., **K24** 274, **TFM4** 289; *Linociera pauciflora* (Wall.) C.B. Clarke, **FMP2** 317; tree to 17 m tall; coastal, riverine and swamp forest; throughout.

150.1.12 **Chionanthus spiciferus** (Ridl.) Kiew, **K24** 275; *Linociera spicifera* Ridl., **FMP2** 316; tree; lowland forest; only known from type, Rawang F.R., Sl; endemic.

150.2.1 **Jasminum cordatum** Ridl., **K41** 4; limestone hills; West Coast.

150.2.2 **Jasminum curtisii** King & Gamble, **FMP2** 312; climber; Ipoh, Pk; endemic.

150.2.3 **Jasminum decussatum** Wall., **FMP2** 313; bushy climber; open country; Ps, Kd.

150.2.4 **Jasminum elongatum** (Bergius) Willd., **G16** 572; *Jasminum bifarium* Wall. *ex* G. Don, **FMP2** 313; *Jasminum evansii* Ridl., **FMP2** 313; *Jasminum arenarium* Ridl., **FMP2** 313; *Jasminum aemulum* R.Br., **K42** 312; climbing shrub; forest margins and clearings; common throughout.

150.2.5 **Jasminum griffithii** C.B. Clarke, **FMP2** 311; slender climber; lowland forest; Pk, Sl, Ml, Jh, Sp; endemic.

150.2.6 **Jasminum insigne** Blume, **FMP2** 314; stout liana; lowland forest; Pk, Ph.

150.2.7 **Jasminum insularum** Kerr, **K41** 7; on limestone; P.Langkawi, Kl.

150.2.8 **Jasminum kedahense** Ridl., **FMP2** 311; stout climber; Gg Jerai, Kd; endemic.

150.2.9 **Jasminum lanceolaria** Roxb. ssp. **scortechinii** (King & Gamble) P.S. Green, **G16** 576; *Jasminum scortechinii* King & Gamble, **FMP2** 315; climber; hill forest; Pn, Pk, Ph.

150.2.10 **Jasminum longipetalum** King & Gamble, **FMP2** 314; slender climber; lowland forest; Pk, Sp; endemic.

150.2.11 **Jasminum maingayi** C.B. Clarke, **FMP2** 311; stout climber; hill forest; Ps, Pn, Pk, Ph, Sl.

150.2.12 **Jasminum malayanum** Kiew, **K40** 77; *Jasminum adenophyllum auct. non* Wall., **FMP2** 314; slender climber; hill forest on limestone; Kd; endemic.

150.2.13 **Jasminum smilacifolium** Griff. *ex* C.B. Clarke, **FMP2** 314; climber; lowland forest; NS, Ml.

150.2.14a **Jasminum wrayi** King & Gamble var. **axillare** King & Gamble, **FMP2** 312 '*axillaris*', **K41** 13; climber; Maxwell's Hill, Pk; endemic.

150.2.14b **Jasminum wrayi** King & Gamble var. **wrayi**, **FMP2** 312, **K41** 13; slender climber; lowland forest; Pk, Sl; endemic.

150.3.1 **Ligustrum confusum** Decne., **K22** 144, **TFM4** 290; *Olea puberula* Ridl., **FMP2** 318; shrub or small tree to 8 m tall; on limestone; Ps, P. Langkawi, Ph, Sl.

150.3.2 **Ligustrum glomeratum** Blume, **K22** 147, **TFM4** 290; shrub or tree to 15 m tall; open areas; Ps.

150.4.1 **Myxopyrum nervosum** Blume, **FMP2** 320, **K26** 505, **TFM4** 285; climbing shrub; lowland forests and swamps; widespread.

150.5.1 **Olea brachiata** (Lour.) Merr., **TFM4** 291; *Olea maritima* Wall. *ex* Don, **FMP2** 318; tree to 10 m tall; rocky shores; widespread.

150.5.2 **Olea dentata** Wall. *ex* DC., **TFM4** 292; *Olea penangiana* Ridl., **FMP2** 318; tree to 20 m tall; rocky coasts; Pn.

150.6.1 **Osmanthus scortechinii** King & Gamble, **FMP2** 315 incl. var. *oblonga* King & Gamble, **TFM4** 286; *Olea capitellata* Ridl., **FMP2** 319; shrub or small tree; montane forest; Tg, Pk, Ph, Sl, Jh.

151. ONAGRACEAE

151.1.1 **Ludwigia adscendens** (L.) H. Hara, **FMı8** 104, **M47** 368; *Jussiaea repens* L., **FMP1** 827; creeping or floating herb, ascending to 60 cm; pools, ditches and swamps; widespread.

151.1.2 **Ludwigia hyssopifolia** (G. Don) Exell, **FMı8** 104, **M47** 370; *Jussiaea suffruticosa auct. non* L., **FMP1** 827; herb to 3 m tall; weed of shallow water and wet places; widespread.

151.1.3 **Ludwigia octovalvis** (Jacq.) P.H. Raven, **FMı8** 101, **M47** 372; *Jussiaea erecta auct. non* L., **FMP1** 827; *Jussiaea villosa* Lam., **FMP1** 828; herb to 4 m tall; wet places, near rivers and ditches; widespread.

151.1.4 **Ludwigia perennis** L., **FMi8** 103, **M47** 374; *Ludwigia parviflora* Roxb., **FMP1** 828; herb to 1 m tall; wet places; Pk, Sl.

151.1.5 **Ludwigia peruviana** (L.) H. Hara, **FMi8** 100, **M47** 376; *Jussiaea speciosa* Ridl., **FMP1** 828; shrub to 3 m tall; ditches, damp waste ground; Sp; naturalized from tropical America.

151.1.6 **Ludwigia prostrata** Roxb., **FMP1** 829, **FMi8** 103; herb to 60 cm tall; water margins; widespread.

152. OPILIACEAE

152.1.1 **Cansjera rheedei** J.F. Gmel., **FMi10** 50, **TFM4** 294; *Cansjera zizypholia* Griff., **FMP3** 172; liana or shrub to 5 m tall; coastal vegetation; Ph, NS, Ml, Jh, Sp.

152.2.1 **Champereia manillana** (Blume) Merr., **FMi10** 35, **TFM4** 294; *Champereia griffithii* Planch. *ex* Kurz, **FMP3** 172; shrub or small tree to 10 m tall; lowland forest; widespread.

152.3.1 **Lepionurus sylvestris** Blume, **FMP3** 172, **FMi10** 43, **TFM4** 295; *Lepionurus oblongifolius* (Griff.) Mast. var. *angustifolius* Ridl., **FMP3** 173; shrub to 3 m tall; lowland and hill forest to 600 m; throughout.

152.4.1 **Melientha suavis** Pierre, **FMi10** 39, **TFM4** 296; small tree to 12 m tall; lowland forest; Pn, Kl, Ph (once each).

153. OXALIDACEAE

153.1.1 **Averrhoa bilimbi** L., **FMP1** 331, **TFM1** 348, **FMi7** 177; tree to 15 m tall; lowland forest, often near rivers; native in the north, widely cultivated; Ps, Kd.

153.2.1 **Biophytum adiantoides** Wight *ex* Edgew. & Hook.*f*., **FMP1** 331, **FMi7** 165; woody-stemmed 'herb' to 30 cm tall; along rivers, forest clearings; Ps, Pk, Ph.

153.2.2 **Biophytum reinwardtii** (Zucc.) Klotzsch, **FMP1** 331, **FMi7** 164; herb to 35 cm tall; waste places, plantations; Kl.

153.2.3 **Biophytum sensitivum** (L.) DC., **FMP1** 331, **FMi7** 162; herb to 35 cm tall; weed; Pn, Ml.

153.3.1 **Dapania racemosa** Korth., **TFM1** 347, **FMi7** 167; *Dapania scandens* Stapf, **FMP1** 334; liana to 30 m long; swampy lowland forest; Pk.

153.4.1 **Oxalis barrelieri** L., **FMP1** 330, **FMi7** 155, **M44** 378; erect herb to 1.5 m tall; waste places; widespread; naturalized from tropical South America.

153.4.2 **Oxalis corniculata** L., **FMP1** 330, **FMi7** 155, **M44** 380; small herb; garden weed, waste places; Pn, Pk, Ml, Sp.

153.4.3 **Oxalis corymbosa** DC., **FMP1** 330, **FMi7** 159; bulbous herb to 30 cm tall; waste places, lowlands and hills; scattered; naturalized from tropical South America.

153.5.1 **Sarcotheca glomerula** Veldkamp, **TFM1** 348, **FMi7** 170; *Connaropsis macrophylla* King, **FMP1** 334; shrub or small tree to 9 m tall; lowland forest; Kd, Pk, Ph; endemic.

153.5.2 **Sarcotheca griffithii** (Planch. *ex* Hook.*f.*) Hallier *f.*, **TFM1** 349, **FMi7** 170; *Connaropsis griffithii* Planch. *ex* Hook.*f.*, **FMP1** 332; tree to 42 m tall; lowland forest; Ps, Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

153.5.3a **Sarcotheca laxa** (Ridl.) Knuth var. **hirsuta** Veldkamp, **TFM1** 349, **FMi7** 171; shrub or tree to 23 m tall; swamps and forest margins; Jh; endemic variety.

153.5.3b **Sarcotheca laxa** (Ridl.) Knuth var. **laxa**, **TFM1** 349, **FMi7** 171; *Connaropsis glabra* Ridl., **FMP1** 332; *Connaropsis laxa* Ridl., **FMP1** 333; shrub or tree to 23 m tall; swamps and forest margins; Ps, Kd, Kl, Tg, Pk; endemic variety.

153.5.3c **Sarcotheca laxa** (Ridl.) Knuth var. **sericea** (Ridl.) Veldkamp, **TFM1** 349, **FMi7** 171; *Connaropsis sericea* Ridl., **FMP1** 334; *Connaropsis simplicifolia* Ridl., **FMP1** 334; shrub or tree to 23 m tall; swamps and forest margins; Tg, Ph, Jh, Sp; endemic variety.

153.5.4 **Sarcotheca monophylla** (Planch. *ex* Hook.*f.*) Hallier *f.*, **TFM1** 349, **FMi7** 172; *Connaropsis monophylla* Planch. *ex* Hook.*f.*, **FMP1** 332; tree to 30 m tall; lowland forest; Pk, Ph, Sl, Ml; endemic.

154. PANDACEAE

154.1.1 **Galearia fulva** (Tul.) Miq., **FMP3** 257, **TFM2** 98; *Galearia affinis* (R.Br.) Miq., **FMP3** 255; *Galearia lindleyana* (Tul.) Hook.*f.*, **FMP3** 255; *Galearia phlebocarpa* (R.Br.) Miq., **FMP3** 255; *Galearia minor* Gage, **FMP3** 256; *Galearia ridleyi* Gage, **FMP3** 256; *Galearia wallichii* (R.Br.) Kurz, **FMP3** 256; *Galearia finlaysonii* (R.Br.) Miq., **FMP3** 257; *Galearia fusca* Ridl., **FMP3** 257; *Galearia pedicellata* (R.Br.) Miq., **FMP3** 257; *Galearia subulata* (Müll.Arg.) Hook.*f.*, **FMP3** 258; small tree; lowland and hill forest to 690 m; throughout.

154.1.2 **Galearia maingayi** Hook.*f.*, **FMP3** 255, **TFM2** 98; tree to 30 m tall; lowland forest to 300 m; Kd, Pn, Kl, Pk, Ph, Sl, NS, Jh, Sp.

154.1.3 **Galearia stenophylla** Merr., **TFM2** 98; treelet; hill and montane forest; Ulu Gombak and Klang Gates, Sl.

154.2.1 **Microdesmis caseariifolia** Planch., **FMP3** 258, **TFM2** 118; shrub to 3 m tall; lowlands, often on or near limestone; throughout.

155. PASSIFLORACEAE

155.1.1 **Adenia cordifolia** (Blume) Engl., **FMi7** 430; *Adenia populifolia* var. *pentamera* King, **FMP1** 841; liana to 50 m long; lowland forest margins and clearings; widespread.

155.1.2a **Adenia macrophylla** (Blume) Koord. var. **macrophylla**, **FMi7** 428; *Adenia acuminata* (*non* Blume) King, **FMP1** 841; *Adenia grandifolia* Ridl., **FMP1** 842; liana to 25 m long; lowland and hill forest; widespread.

155.1.2b **Adenia macrophylla** (Blume) Koord. var. **singaporeana** (Wall. *ex* G. Don) W.J. de Wilde, **FMi7** 429; *Adenia singaporeana* (Wall. *ex* G. Don) Engl., **FMP1** 841; liana to 25 m long; lowland forest margins; Jh, Sp; endemic variety.

155.1.3a **Adenia penangiana** (Wall. *ex* G. Don) W.J. de Wilde var. **parvifolia** (Pierre *ex* Gagnep.) W.J. de Wilde, **FMi7** 423; tuberous climber or creeper to 2 m long; on limestone hills; Ps, Kd, P. Langkawi.

155.1.3b **Adenia penangiana** (Wall. *ex* G. Don) W.J. de Wilde var. **penangiana**, **FMi7** 423; *Adenia nicobarica* (Kurz *ex* Trimen) King, **FMP1** 840; climber to 6 m tall; lowland forest margins; widespread.

155.2.1 **Paropsia vareciformis** (Griff.) Mast., **FMP1** 842, **FMi5** 14, **TFM2** 157; tree to 24 m tall; lowland and hill forest to 500 m; Tg, Pk, Ph, Sl, NS, Ml.

155.3.1 **Passiflora foetida** L., **FMP1** 839, **M47** 384; slender hairy vine; waste places in the lowlands; widespread; naturalized from tropical America.

155.3.2 **Passiflora laurifolia** L.; **B02** 290; wiry vine; forest margins; widespread; naturalized from tropical America.

155.3.3 **Passiflora perakensis** Hallier *f.*, FMI7 414; *Passiflora horsfieldii auct. non* Blume, **FMP1** 839; slender climber to 15 m long; lowland and hill forest to 1000 m; Kd, Pk, Ph.

155.3.4 **Passiflora suberosa** L., **B02** 290, **C26** 662; vine; waste places; Sp; naturalized from tropical America.

156. PEDALIACEAE

156.1.1 **Sesamum orientale** L., **S18** 656; *Sesamum indicum* L., **FMP2** 553, **FMi4** 217; herb to 2 m tall; waste places in the lowlands; naturalized probably from Africa.

156.1.2 **Sesamum radiatum** L., **FMi4** 218, **T05** 131; herb to 1.2 m tall; waste places; Sp; naturalized from Africa.

157. PENTAPHRAGMATACEAE

157.1.1 **Pentaphragma aurantiacum** Stapf, **FMi4** 521; *Pentaphragma grande* Ridl., **FMP2** 203; herb to 90 cm tall; montane forest; Gg Tahan, Ph.

157.1.2 **Pentaphragma begoniifolium** (Roxb. *ex* Jack) Wall. *ex* G. Don, **FMP2** 202, **FMi4** 525; herb to 20 cm tall; lowland forest to 600 m; north of Malaya.

157.1.3 **Pentaphragma cyrtandriforme** Airy Shaw, **FMi4** 522, **K37** 549; prostrate herb 10–20 cm long; montane forest to 1800 m; Gg Mandi Angin, Gg Padang, Tg, and Gg Tapis, Ph; endemic.

157.1.4a **Pentaphragma ellipticum** Poulsen var. **ellipticum**, **K33** 7; *Pentaphragma ridleyi* King & Gamble, **FMP2** 202; *Pentaphragma ellipticum* Poulsen, **FMi4** 527; glabrous succulent herb to 40 cm tall; lowland forest to 550 m; Jh, Sp.

157.1.4b **Pentaphragma ellipticum** Poulsen var. **flocculosum** (King & Gamble) Kiew, **K33** 7; woolly succulent herb to 40 cm tall; lowland forest to 1000 m; Kl, Tg, Ph, NS, Ml, Jh; endemic variety.

157.1.5 **Pentaphragma horsfieldii** (Miq.) Airy Shaw, **FMi4** 527, **K33** 9; *Pentaphragma scortechinii* King & Gamble, **FMP2** 203; herb to 35 cm tall; lowland and montane forest to 2000 m; Pk, Ph, Sl, Ml.

158. PENTAPHYLACACEAE

158.1.1 **Pentaphylax euryoides** Gardner & Champ., **FMi5** 123, **TFM2** 308; *Pentaphylax malayana* Ridl., **FMP1** 206; *Pentaphylax arborea* Ridl., **FMP5** 291; shrub or small tree to 12 m tall; montane forest at 975–1800 m; Ph, Sl.

159. PHYTOLACCACEAE

159.1.1 **Phytolacca octandra** L., **S48** 255; herb to 60 cm tall; mountains above 1200 m; Cameron Highlands, Ph; naturalized from tropical America.

159.2.1 **Rivina humilis** L., **FMi4** 229; erect herb to 1 m tall; waste places, usually slightly shaded; Sp; naturalized from tropical America.

160. PIPERACEAE

160.1.1 **Peperomia blanda** (Jacq.) H.B.K. var. **leptostachya** (Hook. & Arn.) Düll, **D44** 110; *Peperomia dindygulensis* Miq., **FMP3** 26, **C14** 197, **K50** 33; succulent herb to 30 cm tall; on shaded limestone; Ph, Sl.

160.1.2 **Peperomia decumbens** C. DC., **FMP5** 327; creeping herb to 15 cm tall; Gg Raya, P. Langkawi.

160.1.3 **Peperomia kotana** C. DC., **FMP3** 27, **C14** 198; creeping herb to 20 cm tall; on rocks including limestone; Kd, Kl, Ph, Jh; endemic.

160.1.4 **Peperomia malaccensis** Ridl., **FMP3** 27; succulent herb; on rocks; Batu Tiga, Ml; ?endemic.

160.1.5 **Peperomia maxwelliana** C. DC., **FMP3** 27, **S48** 248; succulent decumbent herb; on shaded rocks; Maxwell's Hill, Pk, and Bt Takun, Sl (limestone); endemic.

160.1.6 **Peperomia pellucida** (L.) Kunth, **FMP3** 27; succulent herb to 20 cm tall; common weed of damp shaded sites; throughout; naturalized from tropical America.

160.1.7 **Peperomia portulacoides** (Lam.) A. Dietr., **FMP3** 26, **C14** 198; succulent herb; on limestone; Gua Batu, Sl.

160.1.8 **Peperomia wrayi** DC., **FMP3** 26; decumbent herb; on dead trees in lowland forest; Ulu Batang Padang, Pk; ?endemic.

160.1.9 **Peperomia sp.** A, **C14** 198, **K50** 34; succulent herb to 30 cm tall; mostly on limestone; Pk, Ph, Sl; ?endemic.

160.2.1 **Piper acre** Blume, **FMP3** 44; climber; montane forest; Pk.

160.2.2 **Piper aduncum** L., **M46** 307, **C11** 3; shrub or small tree to 3 m tall; roadsides and clearings in lowlands and hills; Sl; naturalized from tropical America.

160.2.3 **Piper argyrites** Ridl., **FMP3** 40; stout climber; lowland forest; Sl; ?endemic.

160.2.4 **Piper bipedale** C. DC., **FMP3** 33; subshrub to 60 cm tall; lowland forest; Pk; ?endemic.

160.2.5 **Piper boehmeriifolium** (Miq.) DC., **FMP3** 41; shrub to 1 m tall; lowland forest; Pk, Ph, NS.

160.2.6 **Piper burkillii** Ridl., **FMP3** 36; slender climber; hill forest; NS; ?endemic.

160.2.7 **Piper caninum** Blume, **FMP3** 38, **C11** 5; slender climber; lowland forest; widespread.

160.2.8 **Piper collinum** C. DC., **FMP3** 36, **C14** 198; slender climber to 4 m; on limestone; once from Gopeng, Pk; endemic.

160.2.9 **Piper conibaccum** C. DC., **FMP3** 48; hill forest; Ph; ?endemic.

160.2.10 **Piper curtipetiolum** C. DC., **FMP3** 46; Gg Inas, Pk; ?endemic.

160.2.11 **Piper curtisii** C. DC., **FMP3** 37; slender creeper; lowland and hill forest; Pk, Sl, Ml, Jh; ?endemic.

160.2.12 **Piper cyrtostachys** Ridl., **FMP3** 41; herb to 60 cm tall; montane forest; Gg Berembun, Pk; ?endemic.

160.2.13 **Piper dindingsanum** C. DC., **FMP3** 38; ?climber; hill forest; Dindings, Pk; ?endemic.

160.2.14 **Piper erecticaule** C. DC., **FMP3** 43; ?shrub; montane forest; Gg Jerai, Kd; ?endemic.

160.2.15 **Piper eucalyptolimbum** C. DC., **FMP3** 49; scandent shrub; hill forest; Larut, Pk; ?endemic.

160.2.16 **Piper febrifugum** C. DC., **FMP3** 39; scandent shrub; lowland forest; Pk; ?endemic.

160.2.17 **Piper filipes** C. DC., **FMP3** 49; ?; Larut, Pk; ?endemic.

160.2.18 **Piper firmum** C. DC., **FMP3** 31; ?climber; Tapah, Pk.

160.2.19 **Piper flavibaccum** C. DC., **FMP3** 49; ?; Gg Batu Puteh, Pk; ?endemic.

160.2.20 **Piper flavimarginatum** C. DC., **FMP3** 31; stout climber; lowland forest; Sp; ?endemic.

160.2.21 **Piper flavispicum** C. DC., **FMP3** 46; herb to 60 cm tall; on limestone; Sg Prya, Pk; ?endemic.

160.2.22 **Piper globulistigmum** C. DC., **FMP3** 43; ?; Pk; ?endemic.

160.2.23 **Piper gymnocladum** C. DC., **FMP3** 46; straggling climber; hill forest; Pk; ?endemic.

160.2.24 **Piper gymnophyllum** C. DC., **FMP3** 49; ?; Gg Bujong Malacca, Pk; ?endemic.

160.2.25 **Piper klossii** Ridl., **FMP3** 35; scandent shrub; montane forest; Sl; ?endemic.

160.2.26 **Piper kotanum** C. DC., **FMP3** 45, **C14** 198; herb to 20 cm tall; mostly from limestone; Kd, Kl, Ph; endemic.

160.2.27 **Piper kunstleri** C. DC., **FMP3** 50; herb to 1 m tall; among rocks; Pn; ?endemic.

160.2.28 **Piper kurzii** Ridl., **FMP3** 43; small shrub; lowland and montane forest; Kl, Pk, Ph, Sl.

160.2.29 **Piper lanatum** Roxb., **FMP3** 38; creeper; lowland forest; scattered.

160.2.30 **Piper larutanum** C. DC., **FMP3** 37; scandent shrub; lowland forest; Larut, Pk; ?endemic.

160.2.31 **Piper leptonema** Hook.*f*., **FMP3** 50; climber; hill forest; Pn, Pk.

160.2.32 **Piper lonchites** Wall., **FMP3** 49; slender woody climber; on rocks in hill forest; Pn, Pk; ?endemic.

160.2.33 **Piper longamentum** C. DC., **FMP3** 48; scandent shrub; hill forest; Pk; ?endemic.

160.2.34 **Piper longibracteum** C. DC., **FMP3** 37; climber; hill forest; Pk; ?endemic.

160.2.35 **Piper longicaule** C. DC., **FMP3** 51; climber; lowland forest; Pn, Pk, Ml.

160.2.36 **Piper lowong** Blume, **FMP5** 328; climber; P. Langkawi, Pk.

160.2.37 **Piper macropiper** Pennant, **C11** 10; *Piper miniatum* Blume, **FMP3** 39; *Piper arborescens* Roxb., **Q02** 20; climber; on rocks and trees in lowland and hill forest; widespread west of Main Range.

160.2.38 **Piper magnibaccum** C. DC., **FMP3** 46; climber reaching to 4 m; hill forest; Pk, Ph, Sl; ?endemic.

160.2.39 **Piper maingayi** Hook.*f*., **FMP3** 31; ?climber; lowland forest; Sl, Ml, Sp; ?endemic.

160.2.40 **Piper maxwellanum** C. DC., **FMP3** 35; climber; hill forest; Taiping Hills, Pk; ?endemic.

160.2.41 **Piper minutistigmum** C. DC., **FMP3** 43; large climber; Larut, Pk; ?endemic.

160.2.42 **Piper mucronatum** C. DC., **FMP3** 36; slender liana; lowland forest, occasionally on limestone; Pk; endemic.

160.2.43 **Piper muricatum** Blume, **FMP3** 32; subshrub to 60 cm tall; lowland forest; widespread.

160.2.44 **Piper obovantherum** C. DC., **FMP3** 47; ?; Penang Hill; ?endemic.

160.2.45 **Piper oreophilum** Ridl., **FMP3** 41; small shrub; montane forest; Gg Tahan, Ph; ?endemic.

160.2.46 **Piper pachyphyllum** Hook.*f*., **FMP3** 31; ?climber; lowland forest; Sl, Ml, Sp; ?endemic.

160.2.47 **Piper paucistigmum** C. DC., **FMP3** 35; slender creeper; bamboo forest; Pk; ?endemic.

160.2.48 **Piper pedicellosum** Wall., **FMP3** 34; slender liana; lowland forest; Pk, Sl, Ml, Sp.

160.2.49 **Piper penangense** C. DC., **FMP3** 42; subshrub to 60 cm tall; hill forest; Pn, Pk; ?endemic.

160.2.50 **Piper pentandrum** C. DC., **FMP3** 30; ?climber; Pk; ?endemic.

160.2.51 **Piper polyganum** C. DC., **FMP3** 31; large climber; hill forest; Pk.

160.2.52 **Piper porphyrophyllum** N.E. Br., **FMP3** 45; slender climber; lowland forest; widespread; ?endemic.

160.2.53 **Piper protractum** C. DC., **FMP3** 33, **C10** 147; *Piper malaccense* C. DC., **FMP3** 33; shrub; lowland forest; NS, Ml, Jh, Sp.

160.2.54 **Piper puberulirameum** C. DC., **FMP3** 45; ?shrub; hill forest; Pn; ?endemic.

160.2.55 **Piper ramipilum** C. DC., **FMP3** 39; creeper to 6 m long; hill forest; Pn, Pk, Jh; ?endemic.

160.2.56 **Piper rarispicum** C. DC., **FMP3** 32; ?climber; hill forest; Pn; ?endemic.

160.2.57 **Piper retrofractum** Vahl, **Q02** 106; *Piper officinarum* C. DC., **FMP5** 328; scandent shrub; coastal scrub; Ml, Jh.

160.2.58 **Piper ribesioides** Wall., **FMP3** 34; climber; common in lowland forest; widespread.

160.2.59 **Piper ridleyi** C. DC., **FMP3** 33, **C10** 148; shrub; hill forest; Pk, Sl.

160.2.60 **Piper rufibracteatum** C. DC., **FMP3** 48; Ml; ?endemic.

160.2.61 **Piper rufispicum** C. DC., **FMP3** 42; Gg Hijau, Pk; ?endemic.

160.2.62 **Piper sarmentosum** Roxb., **FMP3** 40; creeping herb to 20 cm tall; banks, waste ground, plantations; widespread.

160.2.63 **Piper schizonephros** C. DC., **FMP3** 32; ?climber; Pn, Ml.

160.2.64 **Piper scortechinii** C. DC., **FMP3** 50; slender creeper; hill forest and limestone; Pk; ?endemic.

160.2.65 **Piper selangorense** C. DC., **FMP3** 34; scandent shrub; montane forest; Sl; ?endemic.

160.2.66 **Piper semangkoanum** C. DC., **FMP3** 45; erect plant; hill forest; Pk, Sl; ?endemic.

160.2.67 **Piper stylosum** Miq., **FMP3** 42; herb to 40 cm tall; lowland forest; widespread.

160.2.68 **Piper subalbicans** C. DC., **FMP3** 37; ?climber; montane forest; Gg Batu Puteh, Pk; ?endemic.

160.2.69 **Piper subfragile** C. DC., **FMP3** 46; climber; Kurau, Pk; ?endemic.

160.2.70 **Piper subgrande** Ridl., **FMP5** 329; woody climber; lowland forest; Ulu Batang Padang, Pk; ?endemic.

160.2.71 **Piper subpenninerve** (C. DC.) Ridl., **FMP3** 47; climber; Pk, Sl.

160.2.72 **Piper subrubrispicum** C. DC., **FMP3** 44; shrub to 1 m tall; Pk; ?endemic.

160.2.73 **Piper subsessililimbum** C. DC., **FMP3** 48; scandent shrub; Gopeng, Pk; ?endemic.

160.2.74 **Piper umbellatum** L., **FMP3** 51; shrub to 2 m tall; damp rocky forest; widespread.

160.2.75 **Piper uncinulatum** Ridl., **FMP5** 329; scandent shrub; hill forest; Fraser's Hill, Ph; ?endemic.

160.2.76 **Piper velutinervium** C. DC., **FMP3** 44; ?shrub; among rocks in hill forest; near Larut, Pk.

160.2.77 **Piper venosum** Ridl., **FMP3** 327; climber; Gg Angsi, NS; ?endemic.

160.2.78 **Piper xanthocarpum** C. DC., **FMP3** 36; climber; hill forest; Pk; ?endemic.

160.3.1 **Zippelia begoniifolia** Blume, **C14** 199; *Zippelia lappacea* Blume, **FMP3** 25; herb to 30 cm tall; lowland forest; Pk.

161. PITTOSPORACEAE

161.1.1 **Pittosporum ferrugineum** W.T. Aiton, **FMP1** 136, **FMi5** 355, **TFM2** 310; shrub or tree to 15 m tall; common near rocky or sandy shores, rarely on limestone; throughout.

161.1.2 **Pittosporum reticosum** Ridl., **FMP1** 137, **FMi5** 354, **TFM2** 309; shrub 3-5 m tall; montane forest 1000-1800 m; Tg, Ph, Sl.

162. PLANTAGINACEAE

162.1.1 **Plantago major** L., **C26** 662; *Plantago asiatica* Michx., **FMP2** 225; herb; waste ground; widespread.

163. PLUMBAGINACEAE

163.1.1 **Plumbago zeylanica** L., **FMP2** 225, **FMi4** 109; straggling shrub to 2.5 m long; open sites, roadsides; widespread.

164. PODOSTEMACEAE

164.1.1 **Malaccotristicha malayana** (J. Dransf. & Whitmore) C. Cusset & G. Cusset, **C34** 175; *Indotristicha malayana* J. Dransf. & Whitmore, **D37** 154; creeping herb with leafy shoots to 2 cm tall; on rocks submerged in fast-flowing rivers; Tg, Ph; endemic.

165. POLYGALACEAE

165.1.1 **Epirixanthes elongata** Blume, **FMP1** 140, **FMi10** 490; violet or red saprophytic herb to 25 cm tall; lowland to montane forest; quite widespread.

165.2.1 **Polygala cardiocarpa** Kurz, **FMP1** 139 in part, **FMi10** 463; herb to 25 cm tall; on limestone; P. Langkawi.

165.2.2 **Polygala chinensis** L., **FMi10** 478; herb to 75 cm tall; waste places; Pn.

165.2.3 **Polygala glaucoides** L., **FMi10** 480; *Polygala brachystachya* (*non* Poir.) Blume, **FMP1** 139; erect or prostrate herb to 40 cm tall; waste places; Sp.

165.2.4 **Polygala malesiana** Adema, **FMi10** 463; *Polygala cardiocarpa auct. non* Kurz, **FMP1** 139 in part; herb to 25 cm tall; on open limestone; Pk, Ph, Sl.

165.2.5 **Polygala oreotrephes** B.L. Burtt, **FMi10** 467; *Polygala monticola* (*non* Kunth) Ridl., **FMP1** 138; shrub 30–90 cm tall; rocky places in the mountains; Pk, Ph, Sl.

165.2.6 **Polygala paniculata** L., **FMi10** 475, **M47** 480; erect herb to 50 cm tall; waste places; Sp; naturalized from Tropical America.

165.2.7 **Polygala polifolia** Presl, **FMi10** 476; erect or prostrate herb to 50 cm tall; roadsides, waste places; Jh.

165.2.8 **Polygala venenosa** Juss. ex Poir., **FMP1** 138, **FMi10** 468; *Polygala pulchra* Hassk., **FMP1** 138; shrub to 5 m tall; lowland and hill forest; widespread.

165.3.1 **Salomonia cantoniensis** Lour., **FMP1** 139, **FMi10** 487; small herb to 30 cm tall; open grassy places; widespread.

165.3.2 **Salomonia ciliata** (L.) DC., **FMP1** 140, **FMi10** 487; *Salomonia oblongifolia* DC., **FMP1** 140; herb to 25 cm tall; open sandy places; P. Langkawi.

165.4.1 **Securidaca inappendiculata** Hassk., **FMi10** 483; *Securidaca tavoyana* Wall. *ex* Benn., **FMP1** 141; *Securidaca bracteata* Benn., **FMP1** 141; liana; lowland and hill forest to 1000 m; scattered.

165.5.1 **Xanthophyllum affine** Korth. *ex* Miq., **FMP1** 143 in part, **TFM1** 354 in part, **FMi10** 503; tree to 30 m tall, usually smaller; lowlands and mountains; widespread.

165.5.2 **Xanthophyllum amoenum** Chodat, **TFM1** 356, **FMi10** 533; tree to 35 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml.

165.5.3 **Xanthophyllum bullatum** King, **FMP1** 144, **TFM1** 356, **FMi10** 501; shrub or small tree to 5 m tall; moist sites in lowland forest; Tg, Pk, Sl; endemic.

165.5.4 **Xanthophyllum chartaceum** Meijden, **FMi10** 539; *Xanthophyllum sp. E*, **TFM1** 366; tree to 30 m tall; lowland forest; Tg, Ph.

165.5.5 **Xanthophyllum cockburnii** Meijden, **FMi10** 502; tree 20 m tall; lowland forest; only known from type, Sg Anak Endau, Ph; endemic.

165.5.6 **Xanthophyllum discolor** Chodat, **FMP1** 147, **TFM1** 356, **FMi10** 520; shrub or small tree to 10 m tall; lowland forest; Jh, Sp.

165.5.7 **Xanthophyllum ellipticum** Korth. *ex* Miq., **TFM1** 357, **FMi10** 530; *Xanthophyllum kingii* Chodat, **FMP1** 143; tree to 30 m tall; lowlands, sometimes at much higher elevations; Kd, Pn, Pk, Ph, Sl, Sp.

165.5.8a **Xanthophyllum eurhynchum** Miq. ssp. **eurhynchum**, **FMi10** 525; *Xanthophyllum verrucosum* Chodat, **FMP1** 147; *Xanthophyllum maingayi auct. non* Hook.*f. ex* A.W. Benn., **FMP1** 360 in part; shrub or tree to 20 m tall; lowland to mountains, forest understorey; widespread.

165.5.8b **Xanthophyllum eurhynchum** Miq. ssp. **maingayi** (Hook.*f. ex* A.W. Benn.) Meijden, **FMi10** 525; *Xanthophyllum palembanicum auct. non* Miq., **FMP1** 149; *Xanthophyllum maingayi* Hook.*f. ex* A.W. Benn., **FMP1** 360 in part; lowland to mountains, forest understorey; widespread.

165.5.9 **Xanthophyllum flavescens** Roxb., **FMi10** 500; *Xanthophyllum affine auct. non* Korth. *ex* Miq., **FMP1** 143 in part, **TFM1** 354 in part; tree to 36 m tall; lowlands and mountains; widespread.

165.5.10a **Xanthophyllum griffithii** Hook.*f. ex* A.W. Benn. ssp. **angustifolium** (Ng) Meijden, **FMi10** 513; *Xanthophyllum griffithii* Hook.*f. ex* A.W. Benn., **FMP1** 149 in part; *Xanthophyllum griffithii* Hook.*f. ex* A.W. Benn. var. *angustifolium* Ng, **TFM1** 358; tree to 27 m tall; lower montane forest to 1400 m; Pk, Sl, NS, Ml.

165.5.10b **Xanthophyllum griffithii** Hook.*f. ex* A.W. Benn. ssp. **erectum** Meijden, **FMi10** 514; *Xanthophyllum griffithii* Hook.*f. ex* A.W. Benn., **FMP1** 149 in part; *Xanthophyllum griffithii* Hook.*f. ex* A.W. Benn. var. griffithii , **TFM1** 359; tree to 27 m tall; lowland and hill forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Sp.

165.5.11 **Xanthophyllum lanceatum** (Miq.) J.J. Sm., **FMi10** 527; *Xanthophyllum glaucum* Wall. *ex* Hassk., **FMP1** 147, **TFM1** 357; shrub or tree to 12 m tall; swampy lowland forest usually near streams; Ps, P. Langkawi, Pn, Kl, Pk, Ph.

165.5.12 **Xanthophyllum malayanum** Meijden, **FMi10** 526; *Xanthophyllum sp. A*, **TFM1** 365; tree to 10 m tall; lowland forest; Ph, Jh; endemic.

165.5.13 **Xanthophyllum monticolum** Meijden, **FMi10** 514; *Xanthophyllum griffithii* Hook.*f. ex* A.W. Benn. var. *montanum* Ng, **FMP1** 359; tree to 10 m tall; lower montane forest at 1000–1500 m; Ph; endemic.

165.5.14 **Xanthophyllum ngii** Meijden, **FMi10** 526; *Xanthophyllum sp. C*, **TFM1** 365; tree to 35 m tall; lowland forest; Tg, NS, Ml.

165.5.15 **Xanthophyllum obscurum** A.W. Benn., **FMP1**; 144, **TFM1** 361, **FMi10** 536; *Xanthophyllum scortechinii* King, **FMP1** 143, **TFM1** 363; tree to 47 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

165.5.16 **Xanthophyllum pubescens** Meijden, **FMi10** 504; *Xanthophyllum sp. B*, **TFM1** 365; shrub or small tree to 12 m tall; lowland to lower montane forest; Ph, Jh; endemic.

165.5.17 **Xanthophyllum pulchrum** King, **FMP1** 146, **TFM1** 361, **FMi10** 521; shrub or small tree to 8 m tall; lowland forest; Pn, Tg, Pk, Jh.

165.5.18 **Xanthophyllum retinerve** Meijden, **FMi10** 524; tree to 12 m tall; Pk, Tg, Ph; endemic.

165.5.19 **Xanthophyllum rufum** Benn., **FMP1** 145, **TFM1** 361, **FMi10** 505; tree to 32 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

165.5.20 **Xanthophyllum stipitatum** A.W. Benn., **FMP1** 145, **TFM1** 363, **FMi10** 535; tree to 50 m tall; lowland and hill forest, usually on ridges; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

165.5.21 **Xanthophyllum sulphureum** King, **FMP1** 145, **TFM1** 363, **FMi10** 502; tree 30–50 m tall; lowland forest; Kl, Pk, Ph; endemic.

165.5.22 **Xanthophyllum venosum** King, **FMP1** 144, **FMi10** 525; *Xanthophyllum wrayi auct. non* King, **TFM1** 363 in part; shrub or small tree to 10 m tall; lowland forest; Pk, Sl.

165.5.23 **Xanthophyllum virens** Roxb., **FMi10** 528; tree to 30 m tall; lowland forest; Kl, Pk.

165.5.24 **Xanthophyllum vitellinum** (Blume) Dietr., **FMi10** 514; *Xanthophyllum hookerianum* King, **FMP1**; 144, **TFM1** 359; *Xanthophyllum curtisii* King, **FMP1** 146; *Xanthophyllum kunstleri* King, **FMP1** 146, **TFM1** 359; *Xanthophyllum griffithii* Hook.*f. ex* A.W. Benn. var. *curtisii* (King) Ng, **FMP1** 359; tree to 30 m tall; lowland to lower montane forest; Pn, Kl, Pk, Ph, NS, Ml, Jh, Sp.

165.5.25 **Xanthophyllum wrayi** King, **FMP1** 148, **TFM1** 363 in part, **FMi10** 525; *Xanthophyllum pubernlum* Ridl., **FMP1** 146; shrub or small tree to 10 m tall; lowland and hill forest; Pn, Kl, Pk, Ph, Sl, NS, Jh, Sp.

166. POLYGONACEAE

166.1.1 **Aconogonum molle** (D. Don) var. **frondosum** (Meisn.) H. Hara, **H17** 172; *Polygonum paniculatum* Blume, **D01** 233, **S46** 254; herb; montane forest clearings; Gg Brinchang, Cameron Highlands, Ph.

166.2.1 **Persicaria attenuata** (R.Br.) Soják ssp. **pulchra** (Blume) K.L. Wilson, **W20** 629; *Polygonum tomentosum* (*non* Schrank) Willd., **FMP3** 11; *Polygonum pulchrum* Blume ssp. *hallieri* Danser, **D01** 157; herb to 60 cm tall; wet places in open country; Ps, Pn, Pk, Ml.

166.2.2 **Persicaria barbata** (L.) H. Hara var. **gracilis** (Danser) H. Hara, **H17** 175; *Polygonum barbatum* L. ssp. *gracile* Danser, **FMP3** 11, **D01** 145; herb to 3 m tall; wet open spots in lowlands and hills; widespread; herb to 1 m tall; ditches and other damp places; widespread.

166.2.3 **Persicaria capitata** (Buch.-Ham. *ex* D. Don) H. Gross, **H17** 175; *Polygonum capitatum* Buch.-Ham. *ex* D. Don, **FMP5** 326; tufted wiry herb; waste ground at the hill resorts; Pk, Ph; naturalized from India.

166.2.4a **Persicaria chinensis** (L.) H. Gross var. **chinensis**, **H17** 175; *Polygonum chinense* L., **FMP3** 12, **D01** 209; scrambling herb; damp waste ground in lowlands and mountains; widespread.

166.2.4b **Persicaria chinensis** (L.) H. Gross var. **ovalifolia** (Meisn.) H. Hara, **H17** 175; *Polygonum malaicum* Danser, **D01** 218; *Polygonum auriculatum* Meisn., **V18** 357; herb to 1.5 m tall; damp open places in the mountains; Ph.

166.2.5 **Persicaria dichotoma** (Blume) Masam., **W19** 179; *Polygonum dichotomum* Blume, **D01** 222; *Polygonum pedunculare* Meisn., **FMP3** 14; slender aquatic herb to 30 cm tall; ditches and ponds; widespread.

166.2.6 **Persicaria hydropiper** (L.) Spach, **H17** 176, **W19** 179; *Polygonum hydropiper* L. ssp. *microcarpum* Danser, **FMP3** 12, **D01** 187; herb to 50 cm tall; damp sandy spots; Kl, Ph, NS

166.2.7 **Persicaria nepalensis** (Meisn.) H. Gross, **H17** 177, **T19** 126; herb; damp open places; Cameron Highlands, Ph; probably naturalized from Continental Asia.

166.2.8 **Persicaria orientalis** (L.) Spach, **W19** 179; *Polygonum orientale* L., **D01** 168, **T05** 131; herb; waste ground; Sp.

166.2.9 **Persicaria pubescens** (Blume) H. Hara, **H17** 177; *Polygonum flaccidum auct. non* Roxb., **FMP3** 12; *Polygonum pubescens* Blume, **D01** 193; herb; damp places; widespread.

The Malayan plants are probably var. *acuminata* (Franch. & Sav.) H. Hara.

166.2.10 **Persicaria strigosa** (R.Br.) Nakai, **H17** 178; *Polygonum strigosum* R.Br., **FMP3** 13, **D01** 227; straggling herb to 1 m tall; once from Pn.

166.2.11 **Persicaria tenella** (Blume) H. Hara var. **kawagoeana** (Makino) H. Hara, **H17** 178; *Polygonum minus* Huds. ssp. *micranthum* Danser, **D01** 176, **FMP3** 11; slender herb to 30 cm tall; wet places; Pk, Ph, Sl.

166.2.1 **Rumex crispus** L., **S48** 255; herb; weed of tea plantation; Cameron Highlands, Ph; naturalized from Europe.

166.2.2 **Rumex patentia** L., **S48** 255; herb; weed of tea plantation; naturalized from Central Asia.

167. PORTULACACEAE

167.1.1 **Portulaca oleracea** L., **FMP1** 151, **FMi7** 129, **M47** 490; fleshy herb to 40 cm tall; waste places, weed of cultivation; widespread.

167.1.2 **Portulaca pilosa** L., **FMP5** 289, **FMi7** 131; herb to 30 cm tall; open sandy places; Sl, Jh; naturalized.

167.1.3 **Portulaca quadrifida** L., **FMP1** 151, **FMi7** 127; small creeping herb; open sandy ground, weed of cultivation; widespread.

167.2.1 **Talinum paniculatum** (Jacq.) Gaertn., **FMi7** 124, **T05** 131; semi-woody plant to 70 cm tall; waste places; Sp; naturalized from tropical America.

168. PRIMULACEAE

168.1.1 **Lysimachia peduncularis** Wall. *ex* Kurz, **FMi6** 182, **C14** 201; herb to 30 cm tall; on open limestone; twice collected at Batu Ayam on P. Langkawi.

169. PROTEACEAE

169.1.1 **Helicia attenuata** (Jack) Blume, **FMP3** 141, **FMi5** 186, **TFM2** 313; *Helicia suffruticosa* Ridl., **FMP3** 141; shrub or small tree to 20 m tall; lowlands and mountains near streams; Ps, Kd, Kl, Tg, Pn, Pk, Ph, Sl, Jh.

169.1.2 **Helicia excelsa** (Roxb.) Blume, **FMP3** 143 incl. var. *forbesii* Gamble & var. *salicifolia* (Prain) Gamble, **FMi5** 174, **TFM2** 315; *Alseodaphne crassipes* Hook.*f.*, **FMP3** 100; small tree to 10 m tall; lowland forests; Kd, Pk, Sl, NS, Ml, Sp.

169.1.3 **Helicia maxwelliana** Gibbs, **FMi5** 178, **TFM2** 312; small tree to 3 m tall; montane forest at 1200 m; one sterile specimen from Gg Padang, Tg.

169.1.4a **Helicia petiolaris** Benn. var. **kingiana** (Prain) Sleumer, **FMi5** 189, **TFM2** 315; *Helicia kingiana* Prain, **FMP3** 142; tree to 27 m tall; montane forests 650–1300 m; Kd, Tg, Pk, Ph, Sl.

169.1.4b **Helicia petiolaris** Benn. var. **petiolaris**, **FMP3** 141, **FMi5** 188, **TFM2** 315; shrub or small tree to 18 m tall; lowland and hill forest to 900 m; Kd, Pk, Sl, NS, Ml.

169.1.5 **Helicia robusta** (Roxb.) R.Br. *ex* Wall., **FMP3** 142, **FMi5** 184, **TFM2** 315; small tree to 10 m tall; lowland and hill forest, mostly near streams; Kd, Kl, Tg, Ph, Sl, Ml, Jh, Sp.

169.1.6 **Helicia rufescens** Prain, **FMP3** 142, **FMi5** 171, **TFM2** 315; tree to 27 m tall; lowland and montane forest to 1700 m; Kd, Kl, Pk, Ph, Sl, Jh.

169.1.7 **Helicia serrata** (R.Br.) Blume, **FMi5** 176, **TFM2** 316; *Helicia curtisii* Gamble, **FMP3** 142; *Helicia scortechinii* Gamble, **FMP3** 143; tree to 8 m tall; hill forest; Pn, Pk (one collection each).

169.2.1 **Heliciopsis cockburnii** Kochummen, **TFM2** 317; tree to 24 m tall; lowland and hill forest to 800 m; Tg, Pk; endemic.

169.2.2 **Heliciopsis montana** Kochummen, **TFM2** 317; tree to 26 m tall; montane forest about 1300 m; Pk, Ph; endemic.

169.2.3 **Heliciopsis ruficula** Sleumer, **FMi5** 192, **TFM2** 319; tree to 33 m tall; lowland and montane forest to 1500 m; Tg, Pk, Ph, Sl; endemic.

169.2.4 **Heliciopsis velutina** (Prain) Sleumer, **FMi5** 191, **TFM2** 320; *Helicia velutina* Prain, **FMP3** 143; tree to 23 m tall; lowland forests; Tg, Pk, Ph, Sl, Jh; endemic.

169.2.5 **Heliciopsis whitmorei** Kochummen, **TFM2** 320; tree to 21 m tall; lowland and hill forest 200–700 m; Tg; endemic.

170. RAFFLESIACEAE

170.1.1 **Rafflesia cantleyi** Solms, **M29** 210; *Rafflesia hasseltii auct. non* Suringar, FMP3 19; parasite of *Tetrastigma* lianas; lowland forest; widespread; ?endemic.

170.1.2 **Rafflesia kerrii** Meijer, **M29** 210; parasite of *Tetrastigma* lianas; lowland forest.

170.2.1 **Rhizanthes lowi** (Becc.) Harms, **M30** 335; *Brugmansia lowi* Becc., **FMP3** 20; parasite of *Tetrastigma* lianas; lowland and hill forest; Tg, Pk, Ph.

170.2.2 **Rhizanthes zippelii** (Blume) Spach, **M30** 339; parasite of lianas; lowland forest; once from near Chenderiang, Pk.

Plants similar to *Rafflesia hasseltii* Suringar [**M29** 210] have recently been reported from the Gerik area of Perak [**L14** 185].

171. RANUNCULACEAE

171.1.1 **Anemone sumatrana** de Vriese, **FMP5** 286, **E02** 10; herb to 60 cm tall; mountains; Cameron Highlands, Ph.

171.2.1 **Clematis papillosa** H. Eichler, **E02** 50; climber; once from near Taiping, Pk.

171.2.2 **Clematis smilacifolia** Wall., **FMP1** 1, **E02** 44; slender climber; open places; Pn, Jh.

171.3.1 **Naravelia dasyoneura** Korth., **E02** 58; *Naravelia axillaris* Ridl., **FMP1** 2; slender climber; hedges in ricefields; once from Kangar, Ps.

171.3.2 **Naravelia laurifolia** Wall. *ex* Hook.*f.* & Thomson, **FMP1** 2, **E02** 54; climber; lowland to montane forest; Pn, Tg, Pk, Ph, Sl.

172. RHAMNACEAE

172.1.1 **Colubrina asiatica** L. *ex* Brongn., **FMP1** 465, **TFM4** 298; shrub to 3 m tall; sandy and rocky shores; all coasts.

172.1.2 **Colubrina beccariana** Warb., **S76** 312; *Colubrina anomala* King, **FMP1** 465, **TFM4** 298; small tree to 15 m tall; hill forest; Pk.

172.2.1 **Gouania javanica** Miq., **FMP1** 469; slender woody climber; open country; Ml northwards.

172.2.2 **Gouania leptostachya** DC., **FMP1** 469; slender woody climber; lowland forest margins; scattered localities.

172.3.1a **Rhamnus borneensis** Steenis var. **borneensis**, **TFM4** 299; tree to 12 m tall; montane forest; Gg Jerai, Kd.

172.3.1b **Rhamnus borneensis** Steenis var. **estellare** Steenis, **TFM4** 299; *Oreorhamnus serrulata* Ridl., **FMP1** 464; tree to 12 m tall; montane forest; Ph, Sl.

172.3.2 **Rhamnus nipalensis** (Wall.) Lawson, **TFM4** 299; liana; lowland forest; Taman Negara, Ph.

172.4.1 **Sageretia thea** (Osbeck) M.C. Johnst., **TFM4** 297; *Sageretia parviflora* Don, **FMP1** 464; scrambling shrub; exposed limestone; only known from Gua Batu, Sl.

172.5.1 **Smythea lanceata** (Tul.) Summerh., **S72** 389; *Smythea pacifica* Seem., **FMP1** 468; liana; seashores; widespread.

172.5.2 **Smythea lancifolia** Ridl., **FMP5** 300; slender climber; lowland and hill forest; Pn; ?endemic.

172.5.3 **Smythea macrocarpa** Hemsl., **FMP1** 468; liana; lowland forest; Pn, Pk.

172.5.4a **Smythea velutina** (Ridl.) S.P. Banerjee & P.K. Mukh. var. **kingiana**, **B09** 251; *Ventilago velutina* Ridl., **FMP1** 467 in part; woody climber; Pk; endemic.

172.5.4b **Smythea velutina** (Ridl.) S.P. Banerjee & P.K. Mukh. var. **velutina**, **B09** 251; *Ventilago velutina* Ridl., **FMP1** 467 in part; woody climber; Pk; endemic.

172.6.1 **Ventilago gladiata** Pierre, **FMP1** 467; woody climber; lowland forest, mostly on limestone; Kl, Pk, Ph.

172.6.2 **Ventilago kurzii** Ridl., **FMP5** 300; woody climber; P. Langkawi.

172.6.3 **Ventilago maingayi** Lawson, **FMP1** 467; woody climber; lowland forest margins; widespread.

172.6.4 **Ventilago malaccensis** Ridl., **FMP1** 466; woody climber; lowland forest; widespread.

172.6.5 **Ventilago oblongifolia** Blume, **FMP1** 467; stout woody climber; lowland forest, also on limestone; widespread.

172.7.1 **Ziziphus affinis** Hemsl., **FMP1** 464, **TFM4** 300; prickly liana; lowland forest; Ps, Kd, Pk.

172.7.2 **Ziziphus angustifolia** (Miq.) Hatus. *ex* Steenis, **TFM4** 300; small tree without prickles; lowland forest; Ps, Kd, Kl, Pk, Ph.

172.7.3 **Ziziphus calophylla** Wall. *ex* Hook.*f*., **FMP1** 463, **TFM4** 300; prickly liana or scandent shrub; lowland forests; throughout.

172.7.4 **Ziziphus elegans** Wall., **FMP1** 463, **TFM4** 300; slender thorny climbing shrub; lowland forest margins; Pk, Ph, Sl, Ml, Sp.

172.7.5 **Ziziphus grewioides** (Warb.) L.M. Perry, **V15** 595, **TFM4** 300 '*grewiodes*'; prickly liana or scandent shrub; lowland forests; Ps, Kd, Pk.

172.7.6 **Ziziphus horsfieldii** Miq., **FMP1** 463, **TFM4** 300; slender thorny liana; lowland forest; Sl, Ml, Sp.

172.7.7 **Ziziphus kunstleri** King, **FMP1** 462, **TFM4** 300; thorny scrambling shrub; lowland forests; throughout.

172.7.8 **Ziziphus oenoplia** (L.) Mill., **FMP1** 462, **TFM4** 300; rambling thorny bush; thickets and open country; throughout.

172.7.9 **Ziziphus pernettyoides** Ridl., **FMP1** 463; thorny scambling shrub; on limestone; Ps, Kd, Pk, Sl; endemic.

173. RHIZOPHORACEAE

173.1.1 **Bruguiera cylindrica** (L.) Blume, **FMı5** 467, **TFM4** 310; *Bruguiera caryophylloides* Blume, **FMP1** 695; tree to 23 m tall; muddy mangroves; widespread.

173.1.2 **Bruguiera gymnorrhiza** (L.) Lam., **FMP1** 695, **FMı5** 461, **TFM4** 310; tree to 36 m tall; mangroves, usually to the landward fringe; widespread.

173.1.3 **Bruguiera hainesii** C.G. Rogers, **FMı5** 468, **TFM4** 310; tree to 33 m tall; inland edge of mangrove; Sl, NS.

173.1.4 **Bruguiera parviflora** (Roxb.) Wight & Arn. *ex* Griff., **FMP1** 695, **FMı5** 464, **TFM4** 310; tree to 24 m tall; inner side of mangrove forests; all coasts.

173.1.5 **Bruguiera sexangula** (Lour.) Poir., **FMı5** 463, **TFM4** 312; *Bruguiera eriopetala* Wight & Arn. *ex* Arn., **FMP1** 695; tree to 33 m tall; mangroves, usually to the landward fringe; all coasts.

173.2.1 **Carallia brachiata** (Lour.) Merr., **FMı5** 485, **TFM4** 313; *Carallia integerrima* DC., **FMP1** 696; *Carallia scortechinii* King, **FMP1** 697; *Carallia spinulosa* Ridl., **FMP1** 698; *Carallia lancaefolia* Roxb., **TFM4** 315; tree to 33 m tall; lowland and hill forest, also in swamps; Kd, Pk, Ph, Sl, NS, Ml, Jh, Sp.

173.2.2 **Carallia eugenioidea** King, **FMP1** 697, **FMı5** 484, **TFM4** 313; *Carallia montana* Ridl., **FMP1** 697; *Carallia euryoides* Ridl., **FMP1** 698, **TFM4** 313; shrub or small tree to 21 m tall; montane forests above 1200 m; Kl, Pk, Ph.

173.2.3 **Carallia suffruticosa** Ridl., **FMP1** 698, **FMı5** 485, **TFM4** 315; shrub 2-3 m tall; lowland forest; Tg, Pk, Sl.

173.3.1 **Ceriops decandra** (Griff.) W. Theob., **FMi5** 471, **TFM4** 316, **M06** 154; small tree to 15 m tall; mangrove; East Coast.

173.3.2 **Ceriops tagal** (Pers.) C.B. Rob., **FMi5** 469, **TFM4** 316; *Ceriops candolliana* Arn., **FMP1** 694; tree to 15 m tall; mangrove; commoner on West Coast.

173.4.1 **Gynotroches axillaris** Blume, **FMP1** 698, **FMi5** 488, **TFM4** 317; small tree exceptionally reaching 36 m tall; lowlands, including swamps, to mountains at 1400 m; throughout.

173.5.1 **Kandelia candel** (L.) Druce, **FMi5** 473, **TFM4** 319; *Kandelia rheedei* Wight & Arn., **FMP1** 694 '*rheedii*'; shrub or small tree to 7 m tall; banks of tidal rivers; sporadic.

173.6.1 **Pellacalyx axillaris** Korth., **FMP1** 699, **FMi5** 493, **TFM4** 320; tree to 24 m tall; damp or wet lowland or hill forest; widespread.

173.6.2 **Pellacalyx saccardianus** Scort., **FMP1** 699, **FMi5** 491, **TFM4** 320; tree to 30 m tall; lowland and hill forest to 900 m; widespread; endemic.

173.7.1 **Rhizophora apiculata** Blume, **FMi5** 452, **TFM4** 322; *Rhizophora conjugata auct. non* L., **FMP1** 693; stilt-rooted tree to 30 m tall; mangrove gregarious on soft estuarine mud; all coasts.

173.7.2 **Rhizophora mucronata** Lam., **FMP1** 693, **FMi5** 453, **TFM4** 322; stilt-rooted tree to 30 m tall; gregarious mangrove of muddy or sandy shores; all coasts.

173.7.3 **Rhizophora stylosa** Griff., **FMP1** 693, **FMi5** 456, **TFM4** 323; stilt-rooted tree to 10 m tall; sandy and rocky shores; P. Langkawi, Ml, Jh, Sp.

174. ROSACEAE

174.1.1 **Eriobotrya bengalensis** (Roxb.) Hook.*f.*, **FMP1** 681, **TFM2** 326, **FMi11** 309; shrub or large tree to 27 m tall; offshore islands, limestone hills and mountains; scattered widely.

174.2.1a **Photinia integrifolia** Lindl. var. **integrifolia**. **S59** 190; shrub; montane forest at 1550 m; Gg Ulu Kali, Ph.

174.2.1b **Photinia integrifolia** Lindl. var. **sublanceolata** Miq., **TFM2** 323, **FMi11** 314; shrub or small tree to 15 m tall; montane forest at 1200 m; once from Gg Benom, Ph.

174.3.1 **Potentilla indica** (Andr.) Wolf, **FMi11** 291; *Duchesnea indica* (Andr.) Focke, **K09** 27; stoloniferous rosette herb; waste places; scattered; naturalized from elsewhere in tropical Asia.

174.4.1a **Prunus arborea** (Blume) Kalkman var. **arborea**, **TFM2** 338 in part, **FMi11** 332; *Pygeum parviflorum* Teijsm. & Binn., **FMP1** 675; *Pygeum persimile* Kurz, **FMP1** 675; *Pygeum griffithii* Hook.*f*., **FMP1** 676; tree to 30 m tall; lowland to lower montane forest at 1300 m; Pk, Sl, NS, Ml, Sp.

174.4.1b **Prunus arborea** (Blume) Kalkman var. **densa** (King) Kalkman, **TFM2** 338 in part, **FMi11** 332; *Pygeum patens* Ridl., **FMP1** 676; *Pygeum ovalifolium* King, **FMP1** 677; *Pygeum rubiginosum* Ridl., **FMP1** 677; tree to 26 m tall; lowland to lower montane forest at 1300 m; Kd, Pn, Pk, Ph, Sl, Jh.

174.4.1c **Prunus arborea** (Blume) Kalkman var. **stipulacea** (King) Kalkman, **TFM2** 338 in part, **FMi11** 332; *Pygeum stipulaceum* King, **FMP1** 673; tree to 20 m tall; lowland to lower montane forest at 1300 m; Kd, Pk, Ph, Jh, Sp.

174.4.2 **Prunus glabrifolia** Kalkman, **TFM2** 338, **FMi11** 337; *Pygeum scortechinii* King, **FMP1** 674; *Pygeum brevifolium* Hook.*f*., **FMP1** 676; shrub or small tree to 15 m tall; montane forest; Pk, Sl, Ml, Jh.

174.4.3 **Prunus grisea** (Blume) Kalkman var. **tomentosa** (Koord. & Valeton) Kalkman, **TFM2** 337, **FMi11** 339; *Pygeum lanceolatum* Hook.*f*., **FMP1** 674 incl. var. *maingayi* (Hook.*f*.) Ridl.; *Pygeum hookerianum* King, **FMP1** 676; *Pygeum velutinosum* Ridl., **FMP5** 306; shrub or small tree to 15 m tall; lowland forest to 600 m; widespread.

174.4.4 **Prunus javanica** (Teijsm. & Binn.) Miq., **TFM2** 338, **FMi11** 328; *Prunus martabanica* Kurz var. *scortechinii* King, **FMP1** 672; tree to 35 m tall; lowland forest; Kd, Pk, Ph.

174.4.5 **Prunus lamponga** (Miq.) Kalkman, **TFM2** 338, **FMi11** 340; *Pygeum coriifolium* Ridl., **FMP1** 675; tree to 15 m tall; lowland forest to 750 m; Pk, Ph, Jh.

174.4.6 **Prunus malayana** Kalkman, **TFM2** 338, **FMi11** 341; tree to 30 m tall; lower montane forest at about 1200 m; Tg, Ph, Pk; endemic.

174.4.7 **Prunus polystachya** (Hook.*f*.) Kalkman, **TFM2** 339, **FMi11** 343; *Pygeum polystachyum* Hook.*f*., **FMP1** 674; tree to 36 m tall; lowland forest; Kl and Pk southward.

174.4.8 **Prunus wallichii** Steud., **TFM2** 337, **FMi11** 329; small tree to 9 m tall; montane forest; Tg, Ph.

Prunus odorata (M.R. Hend.) Whitmore [**TFM2** 338, **FMi11** 349] remains a dubious species.

174.5.1 **Rubus alceifolius** Poir., **FMP1** 677, **FMi11** 268; *Rubus hasskarlii auct. non* Miq., **FMP1** 679 in part; scandent shrub; forest margins; mostly in the hills; Pk, Ph.

174.5.2 **Rubus elongatus** Sm., **FMP1** 679, **FMi11** 272; thorny climbing or scrambling shrub; forest margins, roadsides; Pn, Pk, Sl, Jh.

174.5.3 **Rubus glomeratus** Blume, **FMi11** 272; weakly prickly scrambling shrub to 3 m tall; forest margins and clearings in the mountains: Pn, Pk.

174.5.4a **Rubus moluccanus** L. var. **angulosus** Kalkman, **FMi11** 278; *Rubus angulosus* (*non* Gremli) Focke, **FMP1** 678; climbing and scrambling shrub; forest margins, riverbanks; Kl, Pk, Ph, Sl, Ml, Jh, Sp.

174.5.4b **Rubus moluccanus** L. var. **discolor** (Blume) Kalkman, **FMi11** 278; *Rubus hasskarlii* Miq., **FMP1** 679 in part; climbing and scrambling shrub; forest clearings; Pn, Ph.

174.5.4c **Rubus moluccanus** L. var. **moluccanus**, **FMi11** 278; *Rubus glomeratus auct. non* Blume, **FMP1** 679; climbing and scrambling shrub; forest margins in the lowlands and hills; P. Langkawi, Pn, Tg, Pk, Ph, Sl, NS, Sp.

174.5.4d **Rubus moluccanus** L. var. **obtusangulus** Miq., **FMi11** 278; climbing and scrambling shrub; montane forest margins; Cameron Highlands, Ph.

174.5.5 **Rubus niveus** Thunb., **FMi11** 264; shrub, sometimes scandent, to 2 m tall; open places in the mountains; Fraser's Hill, Ph; naturalized from continental Asia.

174.5.6 **Rubus sumatranus** Miq., **FMi11** 266; *Rubus rosifolius auct. non* Sm., **FMP1** 680; erect or scrambling shrub to 2 m tall; forest margins and waste places; hills and mountains at 500–2000 m; Pk, Ph, Sl.

174.6.1 **Sorbus corymbifera** (Miq.) Khep & Yakovlev, **K20** 1188; *Pyrus granulosa* Bertol., **FMP1** 680, **TFM2** 340; *Micromeles malayensis* Ridl., **FMP5** 307; *Micromeles corymbifera* (Miq.) Kalkman, **FMi11** 311; tree to 30 m tall, starting life as an epiphyte; montane forest at about 1200 m; quite widespread.

175. RUBIACEAE

175.1.1 **Acranthera pulchella** (Ridl.) K.M. Wong, **W22** 29; *Gardenia pulchella* Ridl., **FMP2** 81; *Gardenia virescens* Ridl., **FMP2** 81; subshrub; lower montane forest; Pk, Ph; endemic.

175.1.2 **Acranthera didymocarpa** (Ridl.) K.M. Wong, **W22** 30; *Gardenia didymocarpa* Ridl., **FMP2** 81; subshrub; hill forest; Sl, NS; endemic.

175.2.1 **Aidia acuminata** (Blume) K.M. Wong, **R20** 167; *Randia binata* King & Gamble, **FMP2** 76; *Gynopachis binata* (King & Gamble) Tirveng., **T14** 283; *Aidia binata* (King & Gamble) K.M. Wong, **W26** 18 in part; climber; Pk, Jh.

175.2.2 **Aidia auriculata** (Wall.) Ridsdale, **R20** 16; *Randia auriculata* (Wall.) Steud., **FMP2** 75; *Anomanthodia auriculata* (Wall.) Hook.*f*., **T14** 277; *Aidia corymbosa* (Blume) K.M. Wong, **W26** 19; liana to 30 m long; lowland forest; Kd, Pk, Sl, NS.

175.2.3 **Aidia densiflora** (Wall.) Masam., **R20** 150; *Randia densiflora* (Wall.) Benth., **FMP2** 75; *Aidia wallichiana* (Wall.) Tirveng., **T14** 263, **TFM4** 338; *Aidia cochinchinensis auct. non* Lour., **W26** 10; small tree to 15 m tall; lowland to montane forest; throughout.

175.2.4 **Aidia impressinervis** (King & Gamble) Ridsdale, **R20** 168; *Randia impressinervis* King & Gamble, **FMP2** 77; *Gynopachis impressinervis* (King & Gamble) Tirveng., **T14** 283; *Aidia binata* (King & Gamble) K.M. Wong, **W26** 18 in part; strangling root climber; lowland forest; Pk.

175.2.5 **Aidia lancifolia** K.M. Wong, **W26** 20, **R20** 16, **T14** 271; *Anomanthodia lancifolia* (K.M. Wong) Tirveng., **T14** 279; climber to 30 m long; once from Jh.

175.2.6 **Aidia parvifolia** (King & Gamble) K.M. Wong, **W26** 16, **T14** 271, **TFM4** 338, **R20** 152; *Randia densiflora* (Wall.) Benth var. *parvifolia* King & Gamble, **FMP2** 76; small tree to 10 m tall; hill forest; P. Langkawi, Kd, Pn, P. Tioman.

175.2.7 **Aidia racemosa** (Cav.) Tirveng., **R20** 149; tree to 15 m tall; on limestone.

175.3.1 **Aidiopsis orophila** (Miq.) Ridsdale, **R20** 176; *Randia forbesii* King & Gamble, **FMP2** 76; *Aidiopsis forbesii* (King & Gamble) Tirveng., **T14** 288; *Aidia forbesii* (King & Gamble) K.M. Wong, **W26** 17; epiphytic strangler or free-standing shrub; lowland forest; Pk, Sl, Jh.

175.4.1 **Aleisanthia rupestris** (Ridl.) Ridl., **FMP2** 20, **TFM4** 339; shrub to 1 m tall; quartzite ridges; only known from Klang Gates, Sl; endemic.

175.4.2 **Aleisanthia sylvatica** Ridl., **FMP2** 20, **TFM4** 339; shrub to 4 m tall; lowland and hill forest; Ulu Kelantan; endemic.

175.5.1 **Antirhea atropurpurea** (Craib) Chaw *ex* K.M. Wong, **W27** 493, **TFM4** 339; *Timonius hirsutus* (*non* Merr.) Ridl., **FMP2** 115; *Timonius atropurpureus* Craib, **C15** 150; *Guettardella atropurpurea* (Craib) M.E. Jansen, **J03** 571; shrub to 3 m tall; lowlands, mostly on limestone; P. Langkawi, Kd, Pn, Pk.

175.6.1 **Argostemma acuminatissimum** Ridl., **FMP5** 315; erect herb to 20 cm tall; hill forest; Pk; ?endemic.

175.6.2a **Argostemma aequifolium** Ridl. var. **aequifolium**, **FMP2** 25, **B07** 333; creeping herb; montane streams; Mount Ophir, Ml; ?endemic.

175.6.2b **Argostemma aequifolium** Ridl. var. **albociliatum** (Ridl.) Bakh.*f.*, **B07** 333; *Argostemma albociliatum* Ridl., **FMP2** 25; creeping herb; mossy rocks; Gg Tahan, Ph; ?endemic.

175.6.3 **Argostemma bicolor** King; herb to 10 cm tall; Pk; ?endemic.

175.6.4 **Argostemma bifolium** Ridl., **FMP5** 314; *Argostemma pictum auct. non* Wall., **FMP2** 24 in part; small herb; montane forest; Pk; ?endemic.

175.6.5 **Argostemma curtisii** King, **FMP2** 33; erect herb to 20 cm tall; in rocky mountain streams; Gg Bujong Malacca, Pk; ?endemic.

175.6.6 **Argostemma debile** Ridl., **FMP2** 32; succulent herb to 20 cm tall; montane forest; Gg Mengkuang Lebah, Sl; ?endemic.

175.6.7 **Argostemma denticulatum** Ridl., **FMP2** 32; erect herb to 30 cm tall; lower montane forest; Genting Simpah, Sl; ?endemic.

175.6.8 **Argostemma diversifolium** Ridl., **FMP2** 23; succulent herb to 1.5 m tall; on limestone; collected once at Lenggong, Pk.

175.6.9a **Argostemma elatostemma** Hook.*f.* var. **elatostemma**, **FMP2** 26, **B33** 14; creeping herb to 10 cm tall; hill forest; Pk, NS.

175.6.9b **Argostemma elatostemma** Hook.*f.* var. **obovatum** King, **FMP2** 26 '*obovata*'; creeping herb; hill forest; Pn, Pk.

175.6.10 **Argostemma elongatum** Ridl., **FMP2** 34; succulent creeping herb; montane forest near streams; Ph; ?endemic.

175.6.11 **Argostemma enerve** Ridl., **FMP2** 33; creeping herb to 20 cm tall; montane forests; Gg Angsi, NS; ?endemic.

175.6.12 **Argostemma grandiflorum** Ridl., **FMP2** 33; ascending herb; montane forest; Gg Kerbau, Pk; ?endemic.

175.6.13 **Argostemma hirsutum** Ridl., **FMP2** 33; slender creeping herb; Gg Bintang, Kd; ?endemic.

175.6.14 **Argostemma hookeri** King, **FMP2** 33; slender creeping herb to 15 cm tall; hill and montane forest; Pn, Ph, Sl, Jh; ?endemic.

175.6.15 **Argostemma humile** Benn., **FMP5** 314; small herb to 10 cm tall; hill forest; Penang Hill; endemic.

175.6.16 **Argostemma inaequilaterum** Benn., **FMP5** 314; *Argostemma acuminatum* King, **FMP2** 23 in part; erect herb; on rocks, often limestone; Pn, Pk, Sl.

175.6.17 **Argostemma involucratum** Hemsl., **FMP2** 28; creeping herb ascending to 25 cm; hill and montane forest; Pn, Pk, Ph, Sl, Ml.

175.6.18a **Argostemma johorense** Ridl. var. **johorense**, **FMP2** 31; herb to 25 cm tall; lowland forest; Jh; ?endemic.

175.6.18a **Argostemma johorense** Ridl. var. **kelsallii** Ridl., **FMP2** 32; herb to 25 cm tall; forest; Bt Hitam, Sl; ?endemic.

175.6.19 **Argostemma klossii** Ridl., **FMP2** 28; erect herb to 15 cm tall; lowland and hill forest; NS, Jh; ?endemic.

175.6.20 **Argostemma lanceolatum** Ridl., **FMP2** 29; erect herb to 20 cm tall; montane forest; Cameron Highlands, Ph; ?endemic.

175.6.21 **Argostemma longifolium** Benn., **FMP5** 315; *Argostemma spinulosum* C.B. Clarke, **FMP2** 29; erect herb to 20 cm tall; montane forest; Pk, Sl, Jh.

175.6.22 **Argostemma longistipulum** Ridl., **FMP5** 315; woody-stemmed herb to 20 cm tall; hill forest; NS, Jh; ?endemic.

175.6.23 **Argostemma muscicola** Ridl., **FMP2** 25; small creeping herb to 5 cm tall; wet mountain rocks; Gg Tahan, Ph; ?endemic.

175.6.24 **Argostemma nervosum** Ridl., **FMP2** 27; creeping herb to 20 cm tall; montane forest; Sl; ?endemic.

175.6.25 **Argostemma neurosepalum** Bakh.*f.*, **B07** 331; *Argostemma acuminatum auct. non* King, **FMP2** 23 in part; herb about 20 cm tall; on limestone rocks; only known from Lenggong, Pk; endemic.

175.6.26 **Argostemma nigrum** M.R. Hend., **H30** 220; creeping herb; montane forest; Gg Benom, Ph; ?endemic.

175.6.27 **Argostemma nutans** King, **FMP2** 24; succulent herb to 30 cm tall; hill forest; Pk; ?endemic.

175.6.28 **Argostemma oblongum** King, **FMP2** 31; herb to 15 cm tall; hill forests; Pk, Sl, NS, Jh; ?endemic.

175.6.29 **Argostemma ophirense** Maing. *ex* Hook.*f.*, **FMP2** 32, **B33** 18; herb to 25 cm tall; montane forest; Pk, Ph, Sl, Ml, Jh.

175.6.30 **Argostemma perakense** King, **FMP2** 31; herb; Pk; ?very dubious species.

175.6.31 **Argostemma pictum** Wall., **FMP2** 24 in part; succulent herb to 15 cm tall; damp rocks in montane forest; widespread.

175.6.32 **Argostemma propinquum** Ridl., **FMP2** 29; erect hairy herb to 10 cm tall; forest; Tg, Pk; ?endemic.

175.6.33 **Argostemma reptans** Ridl., **FMP2** 34; slender creeping herb to 10 cm tall; in rocky streams; Gg Jerai, Kd; ?endemic.

175.6.34 **Argostemma rugosum** Ridl., **FMP2** 30; herb to 10 cm tall; montane forest; Gg Mengkuang Lebah, Sl; ?endemic.

175.6.35 **Argostemma stipulaceum** Ridl., **FMP2** 30; herb to 30 cm tall; lowland forest; Kuala Lebir, Kl; ?endemic.

175.6.36 **Argostemma subcrassum** King, **FMP2** 30; succulent herb to 45 cm tall; lower montane forest; Pk, Ph, Sl; ?endemic.

175.6.37 **Argostemma subinaequale** Benn., **FMP2** 23; fleshy herb to 20 cm tall; Pk.

175.6.38 **Argostemma tenue** Ridl., **FMP2** 26; small tuberous herb; on rocks in streams; NS; ?endemic.

175.6.39 **Argostemma trichanthum** Ridl., **FMP2** 29; small creeping herb; hill forest; Sl; ?endemic.

175.6.40 **Argostemma unifolioide** King, **FMP2** 26; tuberous herb to 20 cm tall; on rocks in hill forest; Pk; ?endemic.

175.6.41 **Argostemma unifolium** Benn., **FMP2** 26; tuberous herb to 20 cm tall; on rocks in hill forest; Kd, Pn, Ml, Jh; ?endemic.

175.6.42 **Argostemma urticifolium** King, **FMP2** 25; herb to 30 cm tall; montane forest; Pk, Ph, Sl.

175.6.43 **Argostemma viscidum** Ridl., **FMP2** 25; sticky herb to 15 cm tall; on rocks near mountain streams; Cameron Highlands, Ph; ?endemic.

175.6.44 **Argostemma wrayi** King, **FMP2** 34; slender procumbent herb; montane forest; Pk; ?endemic.

175.6.45 **Argostemma yappii** King, **FMP2** 24; succulent herb to 30 cm tall; on banks in montane forest; Pk, Ph, Sl; ?endemic.

175.7.1 **Brachytome scortechinii** King & Gamble, **FMP2** 70, **W26** 22, **T14** 293, **TFM4** 340; shrub to 4 m tall; montane forest above 900 m; Kd, Pk, Ph.

175.8.1 **Canthium aciculatum** Ridl., **FMP2** 124, **C15** 142, **TFM4** 341; spiny shrub; on limestone; Kd, Kl, Pk; endemic.

175.8.2 **Canthium cochinchinense** Pierre *ex* Pit., **TFM4** 342 '*cochinchinensis*'; shrub or small tree; open areas and rocky places near the sea; P. Langkawi, Tg.

175.8.3 **Canthium confertum** Korth., **FMP2** 125, **TFM4** 342; tree to 18 m tall; lowland to lower montane forest; throughout.

175.8.4 **Canthium congestiflorum** Ridl., **FMP2** 126, **TFM4** 342; small tree; lowland forest; Jh; endemic.

175.8.5 **Canthium depressinerve** Ridl., **FMP2** 124, **TFM4** 341; shrub to 4 m tall; lowland forest; throughout.

175.8.6 **Canthium glabrum** Blume, **FMP2** 124, **TFM4** 343; tree to 25 m tall; lowland to montane forest; widespread.

175.8.7 **Canthium hirtellum** Ridl., **FMP5** 317, **TFM4** 342; thorny shrub; lowland to lower montane forest; Kl, Ph, Sl, NS, Jh.

175.8.8 **Canthium horridum** Blume, **FMP2** 123, **TFM4** 341; spiny scrambling shrubs; lowland forest margins; throughout.

175.8.9 **Canthium molle** King & Gamble, **FMP2** 123, **TFM4** 341; spiny liana; lowland forest; Ml, Sp; endemic.

175.8.10 **Canthium pauciflorum** King & Gamble, **FMP2** 123, **TFM4** 342; shrub or small tree to 4 m tall; Pk; endemic.

175.8.11 **Canthium scabridum** Ridl., **FMP5** 317, **TFM4** 342; spiny shrub; Kluang, Jh; ?endemic.

175.8.12 **Canthium strigosum** Craib, **TFM4** 341; shrub to 1.5 m tall; lowland forest; P. Langkawi.

175.8.13 **Canthium strychnoides** Craib; **FMP4** 342; shrub or small tree; lowland to lower montane forest; Kl, Tg.

175.8.14 **Canthium sp.** 1, **TFM4** 341; shrub or small tree to 5 m tall; lowland forest; Pk, Ph, Sl; ?endemic.

175.8.15 **Canthium sp.** 2, **TFM4** 342; shrub or small tree to 10 m tall; lowland forest; P. Langkawi; ?endemic.

175.8.16 **Canthium sp.** 3, **TFM4** 342; climber; hill forest; Bt Pengantin, Jh; ?endemic.

175.9.1 **Catunaregam spinosa** (Thunb.) Tirveng., **W26** 25; *Randia oocarpa* Ridl., **FMP2** 71; thorny shrub or small tree; lowland forest; Ps, P. Langkawi, Kd, Tg, Pk, Ph, Sl, NS.

175.9.2 **Catunaregam tomentosa** (Blume *ex* DC.) Tirveng., **W26** 26; *Randia tomentosa* (Blume *ex* DC.) Hook.*f*., **FMP2** 72; large spiny shrub; open sandy places; Kl, Tg.

175.10.1 **Ceriscoides perakensis** (King & Gamble) K.M. Wong, **W26** 27, **TFM4** 343; *Randia perakensis* King & Gamble, **FMP2** 72; small spiny tree to 5 m tall; twice collected in Pk; endemic.

175.11.1 **Chassalia bracteata** Ridl., **FMP2** 143; shrub to 60 cm tall; lower montane forest; Semangkok Pass, Sl; ?endemic.
[**TFM4** 344 says probably *Cephaelis*].

175.11.2 **Chassalia chartacea** Craib, **TFM4** 344; shrub to 3 m tall; lowland to lower montane forest; widespread.

175.11.3 **Chassalia curviflora** (Wall.) Thwaites, **FMP2** 142, **TFM4** 344; shrub to 2 m tall; lowland and hill forest; Kd, Pn.

175.11.4 **Chassalia longifolia** (Dalzell) K.M. Wong, **TFM4** 344; *Chassalia curviflora* (Wall.) Thwaites var. *longifolia* (Dalzell) Hook.*f*., **FMP2** 142; shrub to 2 m tall; lowland and hill forest; Kl, Pn, Pk, Ph, Jh.

175.11.5 **Chassalia minor** Ridl., **FMP2** 142, **TFM4** 344; shrub to 2 m tall; montane forest at 1200–1600 m; Kd, Pk, Ph, Sl; endemic.

175.11.6 **Chassalia pubescens** Ridl., **FMP2** 143, **TFM4** 344; shrub to 2 m tall; lowland forest; Kl, Ph, Sl, Jh, Sp; endemic.

175.12.1 **Coelospermum truncatum** (Wall.) Baill. *ex* K. Schum., **FMP2** 121, **J13** 277; *Coelospermum biovulatum* C.B. Clarke *ex* Ridl., **FMP2** 121; *Coelospermum scandens* Blume, **FMP2** 121; liana climbing to 15 m; forest margins; widespread.

175.13.1 **Coptophyllum bracteatum** Korth., **P27** 18; *Pomazota rivularis* M.R. Hend., **H33** 411, **B27** 201; *Coptophyllum capitatum auct. non* Miq., **FMP2** 43; shrub to 30 cm tall; hill forest; Pk, Sl, Jh.

175.13.2 **Coptophyllum sylvestre** (Ridl.) I.M. Turner, **T24** 222; *Pomazota sylvestris* Ridl., **FMP2** 43, **B27** 199; sparsely-branched herb to 10 cm tall; open places in lowland forest; Ph.

175.14.1 **Coptosapelta griffithii** Hook.*f*., **FMP2** 17; liana; lowland forest; widespread.

175.14.2 **Coptosapelta parviflora** Ridl., **FMP2** 18; lofty liana; lowland forest; Pn, Sp.

175.14.3 **Coptosapelta tomentosa** (Blume) Valeton *ex* K. Heyne, **K09** 153; *Coptosapelta flavescens* Korth., **FMP2** 17; high-climbing liana; lowland forest; widespread.

175.15.1 **Dentella repens** (L.) J.R. Forst. & G. Forst., **FMP2** 44, **M44** 500; small prostrate herb; waste places; widespread.

175.16.1 **Diodia ocymifolia** (Willd. *ex* Roem. & Schult.) Bremek., **K09** 153; herb to 1 m tall; waste places, forest margins; Sp; naturalized from tropical America.

175.16.2 **Diodia sarmentosa** Sw., **FMP2** 174; scrambling herb; damp waste places; widespread; naturalized from tropical America.

175.17.1 **Diplospora beccariana** King & Gamble, **FMP2** 86, **TFM4** 345; *Discospermum beccarianum* (King & Gamble) S.J. Ali & Robbr., **A08** 300; tree to 15 m tall; wet lowland forest; Tg, Pk, Jh.

175.17.2 **Diplospora kunstleri** King & Gamble, **FMP2** 87, **TFM4** 345; *Diplospora pubescens auct. non* Hook.*f*., **FMP2** 88; shrub or small tree to 4 m tall; montane forest 1100–1400 m; Pk, Ph, Ml; endemic.

175.17.3 **Diplospora lasiantha** Ridl., **FMP2** 88, **TFM4** 345; shrub; lowland to montane forest; Pk, Ph, NS, Jh; ?endemic.

175.17.4 **Diplospora majumdarii** M.G. Gangop. & Chakrab., **G02** 86; tree/shrub; lower montane forest; Pk; endemic.

175.17.5 **Diplospora malaccensis** Hook.*f*., **FMP2** 86, **TFM4** 346; tree to 18 m tall; lowland to montane forest at 1500 m; throughout.
[not *Diplospora* according to **A08** 298].

175.17.6 **Diplospora stylosa** Ridl., **TFM4** 345; *Coffea viridiflora* Ridl., **FMP2** 111 in part; shrub; lowland forest; Kd.

175.17.7 **Diplospora velutina** King & Gamble, **FMP2** 87, **TFM4** 345; small tree to 5 m tall; lower montane forest; Selama, Pk; endemic.

175.17.8 **Diplospora wrayi** King & Gamble, **FMP2** 87, **TFM4** 345, **A08** 300; *Coffea viridiflora* Ridl., **FMP2** 111 in part; shrub to 4 m tall; lowland to lower montane forest; Pk, Ph, Sl; endemic.

175.18.1a **Fagerlindia fasciculata** (Roxb.) Tirveng. var. **fasciculata**, **T13** 458, **W26** 29, **TFM4** 346; *Randia fasciculata* (Roxb.) DC., **FMP2** 73; *Randia hirsuta* Ridl., **FMP2** 73; shrub or small tree to 6 m tall; lowland and hill forest; Ps, Kd, Kl, Tg, Pn, Pk, Ph, Ml, Jh.

175.18.1b **Fagerlindia fasciculata** (Roxb.) Tirveng. var. **parviflora** (King & Gamble) K.M. Wong, **W26** 31, **TFM4** 346; shrub or small tree to 6 m tall; lowland and hill forest; P. Langkawi, Kd, Pn; endemic variety.

175.19.1 **Gaertnera grisea** Hook.*f*. *ex* C.B. Clarke, **FMP2** 431, **V01** 373, **TFM4** 347; shrub or small tree to 5 m tall; lowland and hill forest; Sl, Jh, Sp.

175.19.2 **Gaertnera obesa** Hook.*f*. *ex* C.B. Clarke, **FMP2** 431, **V01** 381, **TFM4** 347; shrub to 4 m tall; damp lowland forest, often near rivers; Ml, Jh, Sp; endemic.

175.19.3a **Gaertnera oblanceolata** King & Gamble var. **diversifolia** (Ridl.) Beusekom, **V01** 384; *Gaertnera diversifolia* Ridl., **FMP2** 430; *Gaertnera intermedia* Ridl., **FMP2** 430; *Gaertnera lanceolata* Ridl., **FMP2** 430; *Gaertnera rigida* Ridl., **FMP2** 430; *Gaertnera ovata* Ridl., **FMP2** 431; *Gaertnera latifolia* Ridl., **FMP5** 323; *Gaertnera oblanceolata* King & Gamble, **TFM4** 347 in part; shrub to 3 m tall; hill and montane forest to 1500 m; Ph, Sl, NS.

175.19.3b **Gaertnera oblanceolata** King & Gamble var. **oblanceolata**, **V01** 384; *Gaertnera oblanceolata* King & Gamble, **FMP2** 429, **TFM4** 347 in part; shrub to 3 m tall; hill and montane forest to 1500 m; Pk, Sl.

175.19.4 **Gaertnera schizocalyx** Bremek., **V01** 372, **TFM4** 347; shrub to 1.5 m tall; riverine or swampy lowland forest; a few times from Jh.

175.19.5 **Gaertnera vaginans** (DC.) Merr. ssp. **junghuhniana** (Miq.) Beusekom, **V01** 385, **TFM4** 348; *Gaertnera sessiliflora* Ridl., **FMP2** 427; *Gaertnera acuminata* Benth., **FMP2** 427 incl. var. *oxyphylla* (Benth.) Ridl. and var. *montana* Ridl.; *Gaertnera caudata* Ridl., **FMP2** 429; *Gaertnera pedicellata* Ridl., **FMP2** 429; *Gaertnera ramosa* Ridl., **FMP2** 429; shrub or small tree to 10 m tall; lowland to montane forest; throughout.

175.19.6 **Gaertnera viminea** Hook.*f. ex* C.B. Clarke, **FMP2** 427, **V01** 377, **TFM4** 348; shrub to 3 m tall; lowland forest; NS, Jh, Sp.

175.20.1 **Gardenia carinata** Wall., **FMP2** 82, **TFM4** 349; small tree to 15 m tall; lowland and hill forest; commonest in the north.

175.20.2 **Gardenia coronaria** Buch.-Ham., **W22** 27, **TFM4** 349; small tree; only known from P. Langkawi.

175.20.3 **Gardenia griffithii** Hook.*f.*, **FMP2** 83, **TFM4** 349; small tree; lowland forest; south of Malaya; ?endemic.

175.20.4 **Gardenia pterocalyx** Valeton, **W22** 27, **TFM4** 349; small tree to 5 m tall; swamp forest, heath forest, hill forest; Tg, Ph.

175.20.5a **Gardenia tubifera** Wall. var. **subcarinata** Corner, **TFM4** 350; *Gardenia tubifera* Wall., **FMP2** 82 in part; *Gardenia resinifera* Korth., **FMP2** 82; tree usually 8-15 m but sometimes to 25 m tall; lowland and hill forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

175.20.5b **Gardenia tubifera** Wall. var. **tubifera**, **TFM4** 350; *Gardenia tubifera* Wall., **FMP2** 82 in part; *Gardenia elata* Ridl., **FMP2** 83; *Gardenia speciosa* [*non* Salisb.] (Hook.) Hook.*f.*, **FMP2** 83; tree usually 8-15 m but sometimes to 25 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.21.1 **Gardeniopsis longifolia** Miq., **FMP2** 112, **TFM4** 350; shrub or small tree to 8 m tall; lowland to montane forest; throughout.

175.22.1 **Gentingia subsessilis** (King & Gamble) J.T. Johanss. & K.M. Wong. **J15** 352, **TFM4** 425; *Prismatomeris subsessilis* King & Gamble, **FMP2** 117, **TFM4** 395; shrub to 4 m tall; montane forest above 1200 m; Pk, Ph, Sl; endemic.

175.23.1 **Geophila humifusa** King & Gamble, **FMP2** 146; slender creeping herb; Pk; ?endemic.

175.23.2 **Geophila melanocarpa** Ridl., **FMP2** 147; creeping herb to 10 cm tall; hill forest; Pk, Sl; ?endemic.

175.23.3 **Geophila pilosa** H. Pearson, **FMP2** 146; long-creeping herb; lowland forest; Sp.

175.23.4 **Geophila repens** (L.) I.M. Johnst. var. **asiatica** (Cham. & Schltdl.) Fosberg, **F14** 58; *Geophila reniformis* D. Don, **FMP2** 147; *Geophila herbacea* (Jacq.) K. Schum; creeping herb to 10 cm tall; lowland forest; widespread.

175.23.5 **Geophila scortechinii** King, **FMP2** 148; creeping herb; Pk; ?endemic.

175.24.1 **Greenea corymbosa** (Jack) K. Schum., **TFM4** 351; *Greenea jackii* Wight & Arn., **FMP2** 19; shrub or small tree to 10 m tall; rocky coasts and hill ridges to 700 m; widespread.

175.25.1 **Guettarda speciosa** L., **FMP2** 112, **W27** 496, **TFM4** 351; tree to 10 m tall; sea shores; all coasts.

175.26.1 **Gynochthodes coriacea** Blume, **FMP2** 122; high-climbing liana; lowland forest; NS, Sp.

175.26.2 **Gynochthodes macrophylla** Kurz, **FMP2** 122; liana; lowland to montane forest; Pk.

175.26.3 **Gynochthodes sublanceolata** Miq., **FMP2** 122; slender liana; open country, forest margins; widespread, commonest in the south.

175.27.1 **Haldina cordifolia** (Roxb.) Ridsdale, **R16** 361, **TFM4** 353; tree to 40 m tall; lowland forest; once from Ps.

175.28.1 **Hedyotis andamanica** Kurz, **FMP2** 49; slender creeping herb; montane forest; Gg Senyum, Ph.

175.28.2 **Hedyotis auricularia** L., **FMP2** 49; wiry herb to 60 cm tall; open places, roadsides; widespread.

175.28.3 **Hedyotis biflora** (L.) Lam., **F18** 333, **F16** 65; *Oldenlandia paniculata* L., **FMP2** 53; *Oldenlandia biflora* L., **H01** 689; herb; waste places; Pn, Sp.

175.28.4 **Hedyotis brachypoda** (DC.) Sivar. & Biju, **S26** 672; *Oldenlandia diffusa auct. non* (Willd.) Roxb., **FMP2** 54 in part; straggling herb; open sandy places; Sp at least.

175.28.5 **Hedyotis capitellata** Wall. *ex* G. Don, **FMP2** 46, **F18** 326; scrambling herb; lowlands to mountains; common and widespread.

175.28.6 **Hedyotis coronaria** (Kurz) Craib, **F18** 320, **C15** 143; *Hedyotis coronata* Wall. *ex* Hook.*f*. & B.D. Jacks., **FMP2** 48; slender decumbent herb 15-20 cm tall; lowland and hill forest, often on limestone; north of Malaya.

175.28.7 **Hedyotis corymbosa** (L.) Lam., **F18** 333, **F16** 67, **M47** 502; *Oldenlandia corymbosa* L., **FMP2** 54, **V38** 308, **H01** 690; herb to 30 cm tall; common in open sandy places; widespread.

175.28.8 **Hedyotis cyanantha** Kurz, **F16** 69; *Hedyotis caerulia auct. non* (L.) Hook., **FMP2** 52; wiry herb to 20 cm tall; Pn.

175.28.9 **Hedyotis dichotoma** Koenig *ex* Roth. **F18** 332; *Oldenlandia dichotoma* (Koenig *ex* Roth) Hook.*f*., **FMP2** 53; much-branched herb to 30 cm tall; garden weed and open sandy places; widespread.

175.28.10 **Hedyotis diffusa** Willd., **F18** 333, **S26** 672, **M47** 504; *Oldenlandia diffusa* (Willd.) Roxb., **FMP2** 54 in part; straggling herb; open sandy places; widespread.

175.28.11 **Hedyotis flexuosa** Ridl., **FMP2** 47; slender herb to 30 cm tall; on rocks in lowlands and hills; Kd, Ml, Jh; ?endemic.

175.28.12 **Hedyotis globiceps** Ridl., **FMP2** 47, **F18** 336; herb to 30 cm tall; damp places; P. Langkawi.

175.28.13 **Hedyotis havilandii** King, **FMP2** 50; herb to 30 cm tall; Pn, Pk, Ph.

175.28.14 **Hedyotis herbacea** L., **F18** 335; *Oldenlandia heynei* (R.Br. *ex* Wight & Arn.) G. Don, **FMP2** 54; *Oldenlandia herbacea* (L.) Roxb., **V38** 305; bushy herb to 60 cm tall; open sandy places, often near the sea; widespread.

It is possible that this is really *Hedyotis lancifolia* Schumach. [**V38** 292].

175.28.15 **Hedyotis insularis** (Spreng.) Deb & R. Dutta, **D20** 285; *Hedyotis glabra* R.Br. *ex* Wall., **FMP2** 48, **F18** 312; slender branched herb to 60 cm tall; dry places in lowland and hill forest; Ps, Kd, Pn, Pk.

175.28.16 **Hedyotis kunstleri** King, **FMP2** 50; herb to 45 cm tall; near hill forest streams; Ulu Kerling, Pk; ?endemic.

175.28.17 **Hedyotis lindleyana** Hook. *ex* Wight & Arn., **F18** 327; *Hedyotis stipulata* R.Br. *ex* Hook.*f*., **FMP2** 48; slender creeping herb; on rocks in mountain streams; Pk, Ph.

175.28.18 **Hedyotis maingayi** Hook.*f*., **FMP2** 46; herb to 30 cm tall; open grassy places on mountains; Gg Ledang, Ml; ?endemic.

175.28.19 **Hedyotis mollis** Wall. *ex* G. Don, **FMP2** 45; scandent herb; hill forest; north of Malaya.

175.28.20 **Hedyotis nitida** Wight & Arn., **FMP2** 51; diffuse wiry herb; Pn, Pk.

175.28.21 **Hedyotis ovatifolia** Cav., **F18** 334; *Oldenlandia nudicaulis* Roth, **FMP2** 53; *Oldenlandia ovatifolia* (Cav.) DC., **C15** 145; *Oldenlandia rosettifolia* Geddes, **C15** 146; small herb to 15 cm tall; on limestone; P. Langkawi.

175.28.22 **Hedyotis pachycarpa** Ridl., **FMP2** 50, **F18** 314; herb to 30 cm tall; damp forest near the sea; Kl.

175.28.23 **Hedyotis patens** Ridl., **FMP2** 46; herb to 60 cm tall; rocky slopes on mountains; Gg Tahan, Ph; ?endemic.

175.28.24 **Hedyotis peduncularis** King, **FMP2** 47; herb; open grassy places on mountains; Gg Jerai, Kd; ?endemic.

175.28.25 **Hedyotis philippinensis** (Willd. *ex* Spreng.) Merr. *ex* C.B. Rob., **F18** 315, **H01** 716; *Hedyotis congesta* R.Br. *ex* G. Don, **FMP2** 51 incl. var. *nicobarica* King; herb to 60 cm tall; lowland and hill forests; widespread.

175.28.26 **Hedyotis pinifolia** Wall. *ex* G. Don, **FMP2** 52, **F18** 324; *Oldenlandia pinifolia* (Wall. *ex* G. Don) K. Schum.; diffuse wiry herb; open sandy places; widespread.

175.28.27 **Hedyotis prainiana** King, **FMP2** 45, **F18** 324; scandent herb; once from Telok Bahang, Pn.

175.28.28 **Hedyotis pterita** Blume, **F18** 332; *Oldenlandia alata* (*non* Koenig) Roxb., **FMP2** 53; *Oldenlandia pterita* (Blume) Miq., **C15** 146; succulent herb to 30 cm tall; open places, garden weed, on limestone; Ps, Ml.

175.28.29 **Hedyotis pumila** L.*f*., **T05** 131; *Oldenlandia pumila* (L.*f*.) DC., **V38** 307; herb; weed of lawns and waste ground; Sp.

175.28.30 **Hedyotis rivalis** Ridl., **FMP2** 47; rheophytic herb to 1 m tall; on rocks in river; Ph, Jh; endemic.

175.28.31 **Hedyotis similis** Geddes, **F18** 324; scandent herb; locality unclear.

175.28.32 **Hedyotis stelligera** Ridl., **FMP2** 47; herb to 60 cm tall; open sandy places; once from Besut, Tg.

175.28.33 **Hedyotis tenelliflora** Blume, **FMP2** 51, **F18** 322; slender erect herb to 40 cm tall; open dry places; widespread.

175.28.34 **Hedyotis tetranda** (Roxb.) Craib, **F18** 315; *Hedyotis macrophylla* Wall. *ex* Wight & Arn., **FMP2** 50; herb to 30 cm tall; sporadic.

175.28.35 **Hedyotis trinervia** (Retz.) Roem. & Schult., **K09** 155; *Oldenlandia trinervia* Retz., **FMP2** 55; small prostrate herb; open sandy places; quite widespread.

175.28.36 **Hedyotis verticillata** (L.) Lam., **F18** 322, **F16** 81; *Oldenlandia verticillata* L.; *Hedyotis hispida* Retz., **FMP2** 52; herb to 60 cm tall; open places; north of Malaya.

175.28.37 **Hedyotis vestita** R.Br. *ex* G. Don, **FMP2** 49, **F18** 312, **F16** 82; *Oldenlandia vestita* (R.Br. *ex* G. Don) Drake; herb to 1 m or more tall; open ground; common and widespread.

175.28.38 **Hedyotis viarum** (Craib) Fukuoka, **F18** 331; herb; waste places; Pn, Sp.

175.29.1 **Hydnophytum formicarum** Jack, **FMP2** 172; large tuberous myrmecophytic epiphyte; forest near the sea, also in the mountains; widespread.

175.30.1 **Hymenodictyon orixense** (Roxb.) Mabb., **M04** 66, **N11** 224; *Hymenodictyon excelsum* (Roxb.) Wall. *ex* DC., **FMP2** 18, **TFM4** 353; tree to 12 m tall; lowland forest; P. Langkawi, Kd.

175.31.1 **Hypobathrum coniferum** (Ridl.) Bakh.*f.*, **K09** 156; *Petunga conifera* Ridl., **FMP2** 85; *Hypobathrum sp. 11*, **TFM4** 355; tree to 9 m tall; lowland forest; only known from type; Botanic Gardens' Jungle, Sp; endemic.

175.31.2a **Hypobathrum longifolium** (DC.) K.M. Wong var. **hirtum** (Ridl.) K.M. Wong, **TFM4** 354 '*hirta*'; small tree to 4 m tall; lowland to hill forest; Kl, Pk, Ph.

175.31.2b **Hypobathrum longifolium** (DC.) K.M. Wong var. **longifolium**, **TFM4** 354; *Petunga longifolia* DC., **FMP2** 84; small tree to 4 m tall; lowland to hill forest; Kl, Pn, Pk, Ph.

175.31.3 **Hypobathrum microcarpum** (Blume) Bakh.*f.*, **TFM4** 355; small tree; lowland forest; once from Ps.

175.31.4 **Hypobathrum racemosum** (Roxb.) Kurz, **TFM4** 355; *Petunga roxburghii* DC., **FMP2** 84; *Petunga floribunda* (King & Gamble) Ridl., **FMP2** 85; small tree to 12 m tall; wet lowland forest; widespread.

175.31.5 **Hypobathrum venulosum** (Hook.*f.*) K.M. Wong, **TFM4** 355; *Petunga venulosa* Hook.*f.*, **FMP2** 85; tree to 6 m tall; lowland and hill forest; widespread; ?endemic.

175.31.6 **Hypobathrum sp. 1**, **TFM4** 355; *Diplospora minutiflora* Ridl., **FMP2** 87; small tree to 4 m tall; lowland and hill forest; Chaning, Kl; Kuala Lompat, Ph; endemic.

175.31.7 **Hypobathrum sp. 2**, **TFM4** 355; tree to 10 m tall; lowland forest; Pk, Ml; ?endemic.

175.31.8 **Hypobathrum sp. 3**, **TFM4** 355; small tree to 11 m tall; lowland forest; Ph, Ml; ?endemic.

175.31.9 **Hypobathrum sp. 4**, **TFM4** 355; small tree; swampy lowland forest; Pk, Jh; ?endemic.

175.31.10 **Hypobathrum sp. 5**, **TFM4** 355; small tree to 4 m tall; Tasek Bera, Ph; ?endemic.

175.31.11 **Hypobathrum sp. 6**, **TFM4** 355; shrub to 2 m tall; Kluang, Jh; ?endemic.

175.31.12 **Hypobathrum sp. 7**, **TFM4** 354; shrub or small tree; lowland forest; Lemoi, Ph; ?endemic.

175.31.13 **Hypobathrum sp. 8**, **TFM4** 355; small tree to 4 m tall; lowland forest; Kl, Tg; ?endemic.

175.31.14 **Hypobathrum sp. 9**, **TFM4** 355; shrub; hill forest at 700 m; Gg Tapis, Ph; ?endemic.

175.31.15 **Hypobathrum sp. 10**, **TFM4** 355; shrub to 2 m tall; swampy forest; Mawai, Jh; ?endemic.

175.32.1 **Ixora brunonis** Don, **FMP2** 91, **TFM4** 356; shrub to 3 m tall; lowland forest; Kd, Pn, Pk.

175.32.2 **Ixora clerodendron** Ridl., **FMP2** 91, **TFM4** 358; *Ixora pumila* Ridl., **FMP2** 91; shrub to 4 m tall; lowland forest, also on limestone; Kd, Tg, Ph; endemic.

175.32.3 **Ixora concinna** Hook.*f.*, **FMP2** 95, **TFM4** 360; shrub to 8 m tall; lowland and hill forest; throughout.

175.32.4 **Ixora congesta** Roxb., **FMP2** 93, **TFM4** 361; shrub or small tree to 6 m tall; lowland and hill forest to 1000 m; throughout.

175.32.5a **Ixora grandifolia** Zoll. & Moritzi var. **grandifolia**, **FMP2** 97, **TFM4** 364; *Ixora fluminalis* Ridl., **FMP2** 97; *Ixora crassifolia* (*non* Merr.) Ridl., **FMP2** 98; *Ixora elliptica* Ridl., **FMP2** 98; *Ixora ridleyi* Merr., **M28** 132; shrub or tree to 18 m tall; lowland and hill forest; throughout.

175.32.5b **Ixora grandifolia** Zoll. & Moritzi var. **lancifolia** Corner, **TFM4** 364; shrub or tree to 18 m tall; lowland and hill forest; Kl, Tg, Pn, Ph, NS, Ml, Jh.

175.32.6a **Ixora javanica** (Blume) DC. var. **javanica**, **TFM4** 360; *Ixora stricta auct. non* Roxb., **FMP2** 94 in part incl. var. *amoena* (Don) Ridl.; shrub to 4 m tall; lowland and hill forest, often cultivated; widespread.

175.32.6b **Ixora javanica** (Blume) DC. var. **retinervia** Corner, **TFM4** 360; shrub or small tree to 9 m tall; lowland and hill forest to 1000 m; widespread; endemic variety.

175.32.7 **Ixora kingstonii** Hook.*f.*, **TFM4** 358; shrub or small tree to 8 m tall; swampy lowland forest; Tg, Pk, Ph, Sl, Ml, Jh; endemic.

175.32.8a **Ixora lobbii** King & Gamble var. **lobbii**, **FMP2** 93 incl. var. *angustifolia* King & Gamble, **TFM4** 361; shrub or small tree to 6 m tall; lowland to montane forest at 1200 m; thoughout.

175.32.8b **Ixora lobbii** King & Gamble var. **stenophylla** Corner, **TFM4** 361; *Ixora stenophylla* sensu Ridl., **FMP2** 94; shrub to 2 m tall; rocky stream banks in lowland forest; widespread.

175.32.9 **Ixora micrantha** Ridl., **FMP2** 98, **TFM4** 360; *Ixora patens* Ridl., **FMP2** 98; *Ixora undulata auct. non* Roxb., **FMP2** 98; shrub or small tree to 10 m tall; hill and montane forest above 700 m; Pk, Ph, Sl; endemic.

175.32.10a **Ixora nigricans** Wight & Arn. var. **nigricans**. **TFM4** 359; *Ixora arguta* King, **FMP2** 92; *Ixora plumea* Ridl., **FMP2** 92; shrub to 4 m tall; lowland forest, also on limestone; widespread.

175.32.10b **Ixora nigricans** Wight & Arn. var. **ovalis** Pit., **TFM4** 359; shrub to 3 m tall; lowland forest, also on limestone; Kd, Kl, Pn, Pk.

175.32.11a **Ixora pendula** Jack var. **montana** (Ridl.) K.M. Wong, **TFM4** 359; *Ixora montana* Ridl., **FMP2** 97; shrub to 7 m tall; montane forest above 1200 m; Pk, Ph, Sl; endemic variety.

175.32.11b **Ixora pendula** Jack var. **pendula**, **FMP2** 95 incl. var. *opaca* (Don) Ridl., **TFM4** 359; *Ixora candida* Ridl., **FMP2** 95; *Ixora diversifolia sensu* King & Gamble, **FMP2** 96; shrub or small tree to 10 m tall; lowland and hill forest to 600 m; throughout.

175.32.12 **Ixora robinsonii** Ridl., **FMP2** 92, **TFM4** 360; shrub or small tree to 7 m tall; montane forest about 1100 m; Kl, Tg, Ph; endemic.

175.32.13a **Ixora scortechinii** King & Gamble var. **caulescens** Corner, **TFM4** 358; shrub to 4 m tall; lowland forest; Kl, Pk, Ph, Sl.

175.32.13b **Ixora scortechinii** King & Gamble var. **scortechinii**, **TFM4** 357; *Ixora humilis* King & Gamble, **FMP2** 94 incl. var. *scortechinii* Ridl.; shrub to 1 m tall; lowland forest; Kl, Tg, Pn, Pk, Ph, Ml; endemic variety.

175.32.14a **Ixora umbellata** Koord. & Valeton var. **multibracteata** (H. Pearson *ex* King & Gamble) Corner, **TFM4** 358; *Ixora multibracteata* H. Pearson *ex* King & Gamble, **FMP2** 92; shrub to 2 m tall; lowland forest; Ps, Kd, Pk.

175.32.14b **Ixora umbellata** Koord. & Valeton var. **umbellata**, **TFM4** 358; shrub to 4 m tall; lowland and hill forest, also limestone; throughout.

175.33.1 **Jackiopsis ornata** (Wall.) Ridsdale, **R18** 296, **TFM4** 364; *Jackia ornata* Wall., **FMP2** 89; tree to 35 m tall; lowlands swamps or near rivers; widespread.

175.34.1 **Kailarsenia campanula** (Ridl.) Tirveng., **T13** 464; *Randia campanula* Ridl., **FMP2** 81; shrub to 2 m tall; open sandy places; Ps, Ph.

175.34.2 **Kailarsenia tentaculata** (Hook.*f.*) Tirveng., **T13** 464; *Gardenia tentaculata* Hook.*f.*, **FMP2** 80; shrub to 1.5 m tall; river banks; widespread.

175.35.1 **Keenania modesta** Hook.*f.*, **H35** 107; subshrub; once from Ps.

175.36.1 **Klossia montana** Ridl., **FMP2** 43; herb to 50 cm tall; montane forest; Ph, Sl; endemic.

175.37.1 **Knoxia corymbosa** L., **FMP2** 177; erect herb; open grassy places; Pn, Ml.

175.38.1 **Kochummenia parviflora** K.M. Wong, **W26** 34, **TFM4** 366; shrub; lowland forest; twice from Tg; endemic.

175.38.2 **Kochummenia stenopetala** (King & Gamble) K.M. Wong, **W26** 32, **TFM4** 366; *Randia stenopetala* (King & Gamble) Ridl., **FMP2** 79; shrub; lowland and hill forest; Pk; endemic.

175.38.3 **Kochummenia sp.**, **TFM4** 366; shrub to 2 m tall; once from Tg; endemic.

175.39.1 **Lasianthus angustifolius** King & Gamble, **FMP2** 161, **TFM4** 368; *Lasianthus stercorarius auct. non* Blume, **FMP2** 166; shrub; lowland and montane forest to 1500 m; Kd, Pk, Ph, Jh; endemic.

175.39.2 **Lasianthus appressus** Hook.*f.*, **FMP2** 156, **TFM4** 371; shrub to 3 m tall; lowland and hill forest; Kd, Pn, Pk, Sl, Jh, Sp.

175.39.3 **Lasianthus attenuatus** Jack, **FMP2** 156, **TFM4** 367; shrub to 1 m tall; lowland and hill forest; Pk, Ph, NS, Ml, Jh, Sp.

175.39.4 **Lasianthus barbellatus** Ridl., **FMP2** 164, **TFM4** 368; shrub to 1 m tall; lowland forest; P. Tioman, P. Pemanggil.

175.39.5 **Lasianthus biflorus** (Blume) M.G. Gangop. & Chakrab., **G05** 338; *Lasianthus gracilis* King & Gamble, **FMP2** 169, **TFM4** 367; shrub about 1 m tall; lowland and hill forest; P. Langkawi, Pk, Ph.

175.39.6 **Lasianthus bractescens** Ridl., **FMP2** 154, **TFM4** 370; shrub to 2 m tall; lowland and hill forest; Pk, Sl; endemic.

175.39.7 **Lasianthus conspicuus** Ridl., **FMP2** 167, **TFM4** 369; shrub to 2 m tall; montane forest at 1200 m; Pk, Ph; endemic.

175.39.8 **Lasianthus constrictus** Wight, **FMP2** 163, **TFM4** 369; shrub to 2 m tall; throughout.

175.39.9 **Lasianthus curtisii** King & Gamble, **FMP2** 161, **TFM4** 369; *Lasianthus pseudolucidus* King, **FMP2** 168; shrub to 2 m tall; hill and montane forest to 1700 m; Pn, Pk; endemic.

175.39.10 **Lasianthus cyanocarpus** Jack, **FMP2** 153, **TFM4** 370; shrub to 1 m tall; lowland and hill forest to 1100 m, sometimes on limestone; throughout.

175.39.11 **Lasianthus densifolius** Miq., **FMP2** 156 incl. var. *calycinus* King and var. *latifolius* King, **TFM4** 368; shrub or small tree to 5 m tall; lowland and hill forest; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.39.12 **Lasianthus ellipticus** Wight, **FMP2** 159, **TFM4** 372; shrub; lowland and hill forest; Pn, Jh, Sp; endemic.

175.39.13a **Lasianthus filiformis** King & Gamble var. **bracteatus** King & Gamble, **TFM4** 367 '*bracteata*'; *Litosanthes filiformis* (King & Gamble) Deb & M.G. Gangop. var. *bracteata* (King & Gamble) Deb & M.G. Gangop., **D22** 222; shrub to 1 m tall; lowland and hill forest, including swamps; Tg, Pk, Ph, Sl, NS; endemic.

175.39.13b **Lasianthus filiformis** King & Gamble var. **filiformis**, **FMP2** 169, **TFM4** 367; *Litosanthes filiformis* (King & Gamble) Deb & M.G. Gangop. var. *filiformis*, **D22** 222; shrub to 1 m tall; lowland and hill forest; Pk, Ph; endemic.

175.39.14 **Lasianthus foxworthyanus** Craib, **TFM4** 369; shrub to 2 m tall; Kl.

175.39.15 **Lasianthus glaber** Ridl., **FMP2** 155, **TFM4** 373; shrub; lowland forest including swamps; Kl, Pk, Ph, NS, Sp; endemic.

175.39.16 **Lasianthus griffithii** Wight, **FMP2** 152 incl. var. *latibracteatus* King & Gamble, **TFM4** 371; shrub or small tree to 4 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.39.17 **Lasianthus harveyanus** King & Gamble, **FMP2** 162, **TFM4** 370; shrub; montane forest; Pk, Ml; endemic.

175.39.18 **Lasianthus inaequalis** Blume, **FMP2** 155, **TFM4** 370; *Lasianthus subinaequalis* King & Gamble, **FMP2** 155; shrub to 2 m tall; lowland and hill forest; Pn, Pk, Ph, Sl, NS.

175.39.19 **Lasianthus lowianus** King & Gamble, **FMP2** 167, **TFM4** 368; *Lasianthus glaberrimus* Ridl., **FMP2** 166; *Amaracarpus caudatus* Ridl., **FMP2** 172; shrub to 2 m tall; lowland and montane forest to 1500 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.39.20 **Lasianthus maingayi** Hook.*f.*, **FMP2** 160 incl. var. *subglabrus* (King) Ridl., **TFM4** 369; shrub or small tree to 3 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.39.21 **Lasianthus malaccensis** King & Gamble, **FMP2** 165, **TFM4** 368; shrub or small tree to 3 m tall; hill tops and montane forest at 600–2100 m; Kl, Tg, Ph, NS, Ml, Jh; endemic.

175.39.22 **Lasianthus mollis** Ridl., **FMP2** 158, **TFM4** 373; shrub to 2 m tall; lowland forest; Ml; endemic.

175.39.23 **Lasianthus montanus** King & Gamble, **FMP2** 163, **TFM4** 373; *Lasianthus coronatus* King & Gamble, **FMP2** 157; *Lasianthus caudiculatus* Ridl., **FMP2** 167; shrub to 3 m tall; montane forest at 1200–1500 m; Pk; endemic.

175.39.24 **Lasianthus myrtifolius** Ridl., **FMP2** 161, **TFM4** 369; shrub to 2 m tall; montane forest above 1300 m; Cameron Highlands, Ph; endemic.

175.39.25 **Lasianthus nervosus** King & Gamble, **FMP2** 163, **TFM4** 367; shrub about 1 m tall; montane forest above 1500 m; Pk, Sl; endemic.

175.39.36 **Lasianthus oblongus** King & Gamble, **FMP2** 166, **TFM4** 368; shrub or small tree to 9 m tall; lowland and hill forest to 1200 m; Kd, Pk, Sl; endemic.

175.39.27 **Lasianthus pendulus** Ridl., **FMP2** 168, **TFM4** 372; *Litosanthes pendula* (Ridl.) Deb & M.G. Gangop., **D22** 222 '*pendulus*'; shrub to 4 m tall; montane forests at 1500–1900 m; Cameron Highlands and Gg Tahan, Ph; endemic.

175.39.28 **Lasianthus perakensis** King & Gamble, **FMP2** 160, **TFM4** 372; *Lasianthus flavinervius* Ridl., **FMP2** 162; shrub or small tree to 4 m tall; lowland to mointane forest; Kd, Kl, Tg, Pn, Pk, Ph, Jh, Sp; endemic.

175.39.29 **Lasianthus pergamaceus** King & Gamble, **FMP2** 164, **TFM4** 369; *Lasianthus chinensis auct. non* Benth., **FMP2** 164; *Lasianthus longifolius auct. non* Wight, **FMP2** 164 in part; *Lasianthus crassifolius* Ridl., **FMP2** 165; shrub or small tree; hill and montane forest to 1700 m; Kl, Tg, Pk, Ph, Sl, Jh.

175.39.30a **Lasianthus pilosus** Wight var. **angustifolius** King & Gamble, **FMP2** 157 '*angustifolia*', **TFM4** 372; shrub; lowland and hill forest; Pk, Sl, Ml.

175.39.30b **Lasianthus pilosus** Wight var. **pilosus**, **FMP2** 157, **TFM4** 370; *Lasianthus hirtus* Ridl., **FMP2** 156; *Lasianthus ferrugineus* King & Gamble, **FMP2** 158; *Lasianthus robustus* King & Gamble, **FMP2** 165; shrub or small tree to 7 m tall; lowland forests; throughout.

175.39.31 **Lasianthus politus** Ridl., **FMP2** 158, **TFM4** 372; shrub or small tree to 6 m tall; hill and lower montane forest to 1100 m; Ph, Sl, NS; endemic.

175.39.32 **Lasianthus pterospermus** Wight, **FMP2** 160, **TFM4** 368; *Lasianthus longifolius auct. non* Wight, **FMP2** 164 in part; shrub or small tree to 3 m tall; lowland and hill forest to 1200 m; Pk, Ph, Sl, NS, Ml, Jh, Sp; endemic.

175.39.33 **Lasianthus retosus** Wight, **TFM4** 371; *Lasianthus pilosus* Wight var. *retosus* (Wight) Ridl., **FMP2** 157 '*setosus*'; shrub; lowland and hill forest; Pk, NS, Ml; endemic.

175.39.34 **Lasianthus rhinocerotis** Blume, **FMP2** 154, **TFM4** 372; shrub; montane forest; 1200–1800 m; Pk, Ph, Sl.

175.39.35 **Lasianthus ridleyi** King & Gamble, **FMP2** 154, **TFM4** 371; *Lasianthus singaporensis* King & Gamble, **FMP2** 159; *Lasianthus maingayi* Hook.*f.* var. *hirtus* Ridl., **FMP2** 160 '*hirta*'; shrub to 2 m tall; lowland and hill forest including swamps; Ph, Sl, Jh, Sp; endemic.

175.39.36 **Lasianthus robinsonii** Ridl., **FMP2** 169, **TFM4** 373; *Litosanthes robinsonii* (Ridl.) Deb & M.G. Gangop., **D22** 222; shrub to 2 m tall; montane forest at about 1200 m; Pk, Ph, Sl; endemic.

175.39.37 **Lasianthus salicifolius** Ridl., **FMP2** 166, **TFM4** 367; shrub; montane forest above 1500 m; Ph, Sl; endemic.

175.39.38 **Lasianthus scabridus** King & Gamble, **FMP2** 152, **TFM4** 370; shrub to 2 m tall; lowland and hill forest; Ml, Jh, Sp.

175.39.39 **Lasianthus scalariformis** King & Gamble, **FMP2** 167, **TFM4** 369; *Litosanthes scalariformis* (King & Gamble) Deb & M.G. Gangop., **D22** 222; shrub to 2 m tall; montane forest at 1800–2200 m; Main Range, Gg Tahan.

175.39.40a **Lasianthus stipularis** Blume var. **hirtus** Ridl., **FMP2** 153, **TFM4** 370; shrub to 2 m tall; lowland forest, also on limestone; Sl; endemic variety.

175.39.40b **Lasianthus stipularis** Blume var. **stipularis**, **FMP2** 152, **TFM4** 368; shrub to 2 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, Jh, Sp.

175.39.41 **Lasianthus subaureus** Craib, **TFM4** 368; shrub; hill and lower montane forest; P. Langkawi, Jh.

175.39.42 **Lasianthus subspicatus** King & Gamble, **FMP2** 168, **TFM4** 373; *Litosanthes subspicata* (King & Gamble) Deb & M.G. Gangop., **D22** 223 '*subspicatus*'; small tree; montane forest; Pk, Pn.

175.39.43 **Lasianthus tomentosus** Blume, **FMP2** 161, **TFM4** 371; *Lasianthus chryseus* Ridl., **FMP2** 158; shrub or small tree to 5 m tall; lowland and hill forest; Tg, Ph, Sl, NS, Ml, Jh, Sp.

175.39.44 **Lasianthus velutinus** Ridl., **FMP2** 159, **TFM4** 372; shrub to 1 m tall; lowland forest; Kl, Tg; endemic.

175.39.45 **Lasianthus villosus** Ridl., **FMP2** 168, **TFM4** 371; *Litosanthes villosa* (Ridl.) Deb & M.G. Gangop., **D22** 223 '*villosus*'; shrub; lowland forest; Tapah, Pk; endemic.

175.39.46 **Lasianthus wrayi** King & Gamble, **FMP2** 162, **TFM4** 369; shrub or small tree; hill forest at 600–900 m; Kd, Ph; endemic.

175.39.47 **Lasianthus sp. 1**, **TFM4** 367; shrub about 1 m tall; lowland forest; Ph; endemic.

175.39.48 **Lasianthus sp. 2**, **TFM4** 370; small tree to 5 m tall; lowland forest; Sg Petuang, Tg; endemic.

175.39.49 **Lasianthus sp. 3**, **TFM4** 370; shrub; lowland forest; Gali, Ph; endemic.

175.39.50 **Lasianthus sp. 4**, **TFM4** 371; shrub to 2 m tall; lowland forest; Kl, Ph, Sl, NS; endemic.

175.39.51 **Lasianthus sp. 5**, **TFM4** 371; shrub; lowland forest; P. Tioman; endemic.

175.39.52 **Lasianthus sp. 6**, **TFM4** 372; shrub to 3 m tall; montane forest at 1500–1900 m; Tg, Ph; endemic.

175.39.53 **Lasianthus sp. 7**, **TFM4** 372; shrub to 3 m tall; hill forest; Pk, Sl; endemic.

175.39.54 **Lasianthus sp. 8**, **TFM4** 373; shrub; lowland forest; Ph, Jh, Sp; endemic.

175.40.1 **Lecananthus erubescens** Jack, **FMP2** 57; epiphytic shrub; wet lowland forest; widespread.

175.41.1 **Lucinaea membranacea** King, **FMP2** 56; slender climber; lowland and montane forest; widespread.

175.41.2 **Lucinaea morinda** DC.; scandent shrub; open sandy spots; widespread.

175.41.3 **Lucinaea paniculata** King, **FMP2** 56; climber; Pk; ?endemic.

175.41.4 **Lucinaea ridleyi** King, **FMP2** 56; epiphytic climber; montane forest; Pk.

175.42.1 **Metadina trichotoma** (Zoll. & Moritzi) Bakh.*f.*, **R16** 374, **TFM4** 374; *Adina polycephala* Benth., **FMP2** 10; tree to 40 m tall; hill and montane forests to 1300 m; scattered.

175.43.1 **Meyna grisea** (King & Gamble) Robyns, **TFM4** 375; *Vangueria grisea* (King & Gamble) Ridl., **FMP2** 126; shrub or small spiny tree; open sandy places; Ps, P. Langkawi.

175.43.2 **Meyna sp.**, **TFM4** 375; shrub or small spiny tree; lowland and secondary forest; Kl, Tg.

175.44.1 **Mitracarpus hirtus** (L.) DC., **T19** 127; *Mitracarpus villosus* (Sw.) DC., **M47** 506; erect or spreading herb to 40 cm tall; sandy waste ground; Sl, Jh, Sp; naturalized from tropical America.

175.45.1 **Mitragyna diversifolia** (Wall. *ex* G. Don) Havil., **R17** 65, **TFM4** 375; *Mitragyne parvifolia auct. non* (Roxb.) Korth., **FMP2** 6; small tree; Ps.

175.45.2 **Mitragyna speciosa** (Korth.) Havil., **FMP2** 6, **R17** 65, **TFM4** 375; tree to 25 m tall; wet lowland forest; Kl, Pk, Ph, Sl.

175.46.1 **Morinda calciphila** K.M. Wong, **W25** 97, **TFM4** 377; climber; on limestone; P. Langkawi, Kd, Kl, Pk, Sl; endemic.

175.46.2 **Morinda citrifolia** L., **FMP2** 117, **W25** 94, **TFM4** 376; tree to 9 m tall; lowland forests and rocky coasts, often cultivated; scattered.

175.46.3 **Morinda corneri** K.M. Wong, **W25** 96, **TFM4** 376; small tree to 5 m tall; forest margins and secondary forest in the lowlands; Tg, Ph; endemic.

175.46.4 **Morinda elliptica** (Hook.*f.*) Ridl., **FMP2** 118, **W25** 94, **TFM4** 377; tree to 16 m tall; lowland secondary forest and forest margins; widespread and common.

175.46.5 **Morinda hispida** K.M. Wong, **W30** 269, **TFM4** 377; climber; heath forest; only known from type, Padang Temambun, Jh; endemic.

175.46.6 **Morinda lacunosa** King & Gamble, **FMP2** 119, **W25** 95, **TFM4** 377; liana; hill forest; a few collections from Pk.

175.46.7 **Morinda ridleyi** (King & Gamble) Ridl., **FMP2** 118, **W25** 96, **TFM4** 377; liana; lowland forest; south of Malaya; endemic.

175.46.8 **Morinda rigida** Miq., **FMP2** 118, **W25** 95, **TFM4** 377; liana; lowland to montane forest; widespread and common.

175.46.9 **Morinda scortechinii** (King & Gamble) Ridl., **FMP2** 118, **W25** 95, **TFM4** 377; liana; lowland forest; a few collections from Pk and Ph; endemic.

175.46.10 **Morinda umbellata** L., **FMP2** 119, **W25** 95, **TFM4** 377; climber; sea shores to mountains; widespread.

175.47.1 **Mussaenda angustisepala** Ridl., **FMP2** 60; large climber; forest margins; north of Malaya; ?endemic.

175.47.2 **Mussaenda cordifolia** Wall. *ex* G. Don, **FMP2** 62; climbing shrub; hill forest; widespread.

175.47.3 **Mussaenda glabra** Vahl, **FMP2** 61; shrub or climber; common in secondary forests; widespread.

175.47.4 **Mussaenda malaccensis** Ridl., **FMP2** 59; shrub; lowland forest; Ml; ?endemic.

175.47.5 **Mussaenda mutabilis** Hook.*f.*, **FMP2** 58; scrambling shrub; lowland to montane forest; widespread.

175.47.6 **Mussaenda oblonga** King, **FMP2** 62; large shrub; hill forests; widespread.

175.47.7 **Mussaenda polyneura** King, **FMP2** 62; large climber; hill forest; Pk.

175.47.8 **Mussaenda purpurascens** Ridl., **FMP2** 61; scrambling shrub; montane forest; Sl; ?endemic.

175.47.9 **Mussaenda spectabilis** Ridl., **FMP2** 59; shrub; lowland forest; P. Tioman; ?endemic.

175.47.10 **Mussaenda villosa** Wall. *ex* Hook.*f.*, **FMP2** 60; shrub; lowland and hill forest; widespread.

175.47.11 **Mussaenda wrayi** King, **FMP2** 59; scandent shrub; montane forest; widespread.

175.48.1 **Mussaendopsis beccariana** Baill., **FMP2** 19, **TFM4** 378; tree to 35 m tall; swampy lowland forest; Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.49.1 **Mycetia cauliflora** Reinw., **TFM4** 379; *Mycetia scortechinii* (King & Gamble) Ridl., **FMP2** 63; shrub or small tree to 3 m tall; hill forest to 700 m; Ph, Sl.

175.49.2 **Mycetia flava** (Ridl.) Ridl., **FMP2** 64, **TFM4** 379; shrub; hill to lower montane forest; Pk, Ph, Sl; endemic.

175.49.3 **Mycetia lanceolata** (Ridl.) Ridl., **FMP2** 64, **TFM4** 379; shrub; montane forest at 1000–1600 m; Ph, Sl.

175.49.4 **Mycetia malayana** (Wall. *ex* Ridl.) Craib, **TFM4** 379; *Adenosacme malayana* Wall. *ex* Ridl., **FMP2** 63; shrub or small tree to 4 m tall; lowland and hill forest, also on limestone; Pn, Pk, Ph, Sl, NS.

175.50.1 **Myrmecodia tuberosa** Jack, **FMP2** 173, **H58** 276; spiny ant-inhabited tuberous epiphyte; lowland forest, usually near the sea; Kl, Pk, Ph, Sp.

175.51.1 **Nauclea officinalis** (Pierre *ex* Pit.) Merr. & Chun, **R16** 328, **TFM4** 380; *Sarcocephalus junghuhnii auct. non* Miq., **FMP2** 7; tree to 30 m tall; lowland and hill forest; throughout.

175.51.2 **Nauclea subdita** (Korth.) Steud., **R16** 329, **TFM4** 381; *Sarcocephalus subditus* (Korth.) Miq., **FMP2** 8; tree to 25 m tall; lowland and hill forest; throughout.

175.52.1 **Neolamarckia cadamba** (Roxb.) Bosser, **TFM4** 381; *Anthocephalus indicus* A. Rich., **FMP2** 8; *Anthocephalus chinensis auct. non* (Lam.) A. Rich.; pagoda tree to 40 m tall; lowland and hill forest, often near rivers; Jh northwards.

175.53.1 **Neonauclea calycina** (DC.) Merr., **R19** 200; tree to 25 m tall; lowland forest; scattered.

175.53.2 **Neonauclea lanceolata** (Blume) Merr. ssp. **gracilis** (Vidal) Ridsdale, **R19** 225; tree to 25 m tall; ?lowland forest; once collected in Malaya, ?Ph.

175.53.3 **Neonauclea pallida** (Reinw. *ex* Havil.) Bakh.*f.* ssp. **malaccensis** (Gand.) Ridsdale, **R19** 199; *Nauclea purpurascens auct. non* Korth., **FMP2** 9; *Neonauclea purpurascens* Ridl., **FMP5** 314 in part; *Neonauclea pallida* (Reinw. *ex* Havil.) Bakh.*f.*, **TFM4** 383; shrub or small tree to 12 m tall; lowland to montane forest, often rheophytic; widespread.

175.53.4 **Neonauclea sp. 1**, **TFM4** 383; tree to 12 m; Pasoh F.R., NS once.

175.53.5 **Neonauclea sp. 2**, **TFM4** 383; tree; Sp.

175.53.6 **Neonauclea sp. 3**, **TFM4** 383; tree; Jh.

175.54.1 **Nertera granadensis** (Mutis *ex* L.*f.*) Druce, **B03** 348 '*granadense*'; *Nertera depressa* Banks & Sol. *ex* Gaertn., **FMP5** 318; densely tufted creeping herb to 5 cm tall; banks on high mountains; Gg Tahan, Ph.

175.55.1 **Ochreinauclea maingayi** (Hook.*f.*) Ridsdale, **R16** 332, **TFM4** 385; *Sarcocephalus maingayi* (Hook.*f.*) Havil., **FMP2** 7; tree to 25 m tall; Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.56.1 **Ophiorrhiza communis** Ridl., **FMP2** 39; herb; lowland and hill forest; common and widespread.

175.56.2 **Ophiorrhiza costata** Ridl., **FMP2** 37; herb to 40 cm tall; lowland and hill forest; widespread; ?endemic.

175.56.3 **Ophiorrhiza discolor** R.Br., **FMP2** 36; herb to 20 cm tall; lowland and hill forest; widespread.

175.56.4 **Ophiorrhiza fontinalis** Ridl., **FMP2** 38; herb to 15 cm tall; on rocks in streams; P. Langkawi.

175.56.5 **Ophiorrhiza fruticosa** Ridl., **FMP2** 41; much-branched shrublet; on limestone; only known from Bt Takun and Gua Batu, Sl; endemic.

175.56.6 **Ophiorrhiza hispidula** Wall. *ex* G. Don, **FMP2** 40; herb to 20 cm tall; montane forest; Pk, Ph.

175.56.7 **Ophiorrhiza kingiana** Ridl., **FMP2** 41; woody-stemmed "herb" to 40 cm tall; near limestone; Pk; ?endemic.

175.56.8 **Ophiorrhiza klossii** Ridl., **FMP2** 37; herb to 30 cm tall; forest; Sl; ?endemic.

175.56.9 **Ophiorrhiza kunstleri** King, **FMP2** 41; woody-stemmed "herb" to 30 cm tall; on limestone; Ps, P. Langkawi, Kl.

175.56.10 **Ophiorrhiza lancifolia** Ridl., **FMP2** 38; subshrub to 20 cm tall; forest; Kl.

175.56.11 **Ophiorrhiza longerepens** Ridl.; **R15** 258, **C15** 147; prostrate herb; on limestone; only known from Gua Musang, Kl; endemic.

175.56.12 **Ophiorrhiza nervosa** Ridl., **FMP2** 40; herb to 30 cm tall; montane forest; Sl; ?endemic.

175.56.13 **Ophiorrhiza pallidula** Ridl., **FMP2** 38; slightly woody-stemmed herb; hill forest; Pk, Ph, Sl; endemic.

175.56.14 **Ophiorrhiza remotiflora** Ridl., **FMP2** 37; *Ophiorrhiza major* Ridl., **FMP2** 36; herb; lowland and hill forest; widespread.

175.56.15 **Ophiorrhiza rosacea** Ridl., **FMP2** 38; much-branched woody-stemmed 'herb' to 30 cm tall; lowland forest; Pk; ?endemic.

175.56.16 **Ophiorrhiza rugosa** Wall., **FMP2** 40; herb to 15 cm tall; lower montane forest; Pk.

175.56.17 **Ophiorrhiza scabrella** Ridl., **FMP2** 39; subshrub to 30 cm tall; lowland forest; P. Langkawi.

175.56.18 **Ophiorrhiza singaporensis** Ridl., **FMP2** 39; herb to 30 cm tall; lowland forest; south of Malaya.

175.56.19 **Ophiorrhiza tenella** King, **FMP2** 40; herb to 30 cm tall; lowland and hill forest; widespread; ?endemic.

175.56.20 **Ophiorrhiza tenuis** Ridl., **FMP2** 42; herb to 20 cm tall; lowland and hill forest; scattered; ?endemic.

175.56.21 **Ophiorrhiza tomentosa** Jack, **FMP2** 41; herb to 50 cm tall; hill forests; widespread.

175.57.1 **Oxyceros curtisii** (King & Gamble) K.M. Wong, **W26** 43; *Randia curtisii* King & Gamble, **FMP2** 74; *Randia incurva* Ridl., **FMP2** 76; spiny liana; lowland and hill forest; Kl, Tg, Pn, Pk, Ph.

175.57.2 **Oxyceros fragrantissima** (Ridl.) K.M. Wong, **W26** 43; *Randia fragrantissima* Ridl., **FMP2** 75; spiny liana; Kl, Sl, Ml, Sp; endemic.

175.57.3 **Oxyceros horrida** Lour., **W26** 38; *Randia kunstleri* King & Gamble, **FMP2** 74; *Oxyceros kunstleri* (King & Gamble) Tirveng., **T13** 466; *Oxyceros pauciflora* (Ridl.) Tirveng., **T13** 466; liana with curved spines; lowlands; P. Langkawi.

175.57.4 **Oxyceros longiflora** (Lam.) T. Yamaz., **W26** 39; *Randia longiflora* Lam., **FMP2** 73; very thorny scrambling shrub; common along rivers and near the sea; P. Langkawi, Pk, Ph, Sl, Ml, Jh, Sp.

175.57.5 **Oxyceros penangiana** (King & Gamble) Tirveng., **T13** 466, **W26** 39; *Randia penangiana* King & Gamble, **FMP2** 72; liana with curved spines; lowland and hill forest; Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp; endemic.

175.57.6 **Oxyceros pubicalyx** K.M. Wong, **W26** 40; ? climber; hill forest; known only from type, Ml; endemic.

175.57.7 **Oxyceros scandens** (Blume) Tirveng., **T13** 466, **W26** 42; *Randia clarkei* King & Gamble, **FMP2** 72; high-climbing liana with recurved spines; lowland forest; Tg, Pk, Sl, NS, Ml, Sp.

175.58.1 **Paederia foetida** L., **FMP2** 173, **P26** 210; *Paederia tomentosa* Blume, **FMP2** 174; vine to 7 m long; open disturbed places and secondary forests in the lowlands; Ps, Kd, Kl, Tg, Pn, Pk, Ph, Sl, Ml, Sp.

175.58.2 **Paederia verticillata** Blume, **FMP2** 174, **P26** 282; vine to 30 m long; lowland forest; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.59.1 **Pavetta graciliflora** Wall. *ex* Ridl., **FMP2** 100, **TFM4** 387; shrub or small tree to 5 m tall; lowland and hill forest to 900 m; widespread.

175.59.2 **Pavetta humilis** Hook.*f*., **FMP2** 101, **TFM4** 388; subshrub to 30 cm tall; lowland and hill forest; Ph, Ml; endemic.

175.59.3 **Pavetta kedahica** Bremek., **TFM4** 387; shrub to 3 m tall; islands off Kd; endemic.

175.59.4 **Pavetta montana** Reinw. *ex* Blume, **TFM4** 387; shrub or small tree to 4 m tall; hill and montane forest, 700-1600 m; Tg, Pk, Ml.

175.59.5 **Pavetta napieri** (Ridl.) Bremek., **TFM4** 388; *Tarenna napieri* (Ridl.) Ridl., **FMP2** 102; small shrub; lowland forest; mostly in the south.

175.59.6 **Pavetta naucleiflora** R.Br. *ex* G. Don, **FMP2** 101, **TFM4** 388; shrub to 4 m tall; lowland forest, sometimes on limestone; Ps, Kd, Pn, Ph.

175.59.7 **Pavetta pauciflora** Ridl., **FMP2** 101, **TFM4** 387; shrub to 3 m tall; on limestone; Ph, Sl; endemic.

175.59.8 **Pavetta salicina** (Ridl.) Bremek., **TFM4** 387; *Tarenna salicina* (Ridl.) Ridl., **FMP2** 104; shrub or small tree to 6 m tall; hill and lower montane forest to 1600 m; Main Range; endemic.

175.59.9 **Pavetta siamica** Bremek., **TFM4** 388; shrub to 4 m tall; exposed riverbanks; Ps, Kd, Kl, Tg, Ph, Jh.

175.59.10 **Pavetta wallichiana** Steud., **TFM4** 388; shrub to 4 m tall; lowland forest; throughout.

175.59.11 **Pavetta sp. 1**, **TFM4** 388; shrub or small tree to 6 m tall; lowland forest; Sl, NS; ?endemic.

175.59.12 **Pavetta sp. 2**, **TFM4** 388; shrub to 3 m tall; swamp forest; Sg Kayu Ara, Jh; ?endemic.

175.59.13 **Pavetta sp. 3**, **TFM4** 388; shrub or small tree to 7 m tall; Kd, Pn; ?endemic.

175.59.14 **Pavetta sp. 4**, **TFM4** 388; shrub or small tree to 7 m tall; P. Langkawi; ?endemic.

175.60.1 **Perakanthus velutinus** (Ridl.) Robyns, **TFM4** 390; *Canthium velutinum* Ridl., **FMP2** 124; shrub to 4 m tall; lowland to lower montane forest; Kd, Pk, Jh; endemic.

175.61.1 **Pertusadina eurhyncha** (Miq.) Ridsdale, **R16** 354, **TFM4** 391; *Adina rubescens* Hemsl., **FMP2** 10; latticed tree to 30 m tall; lowland and hill forest to 400 m; scattered.

175.61.2 **Pertusadina malaccensis** Ridsdale, **R16** 356, **TFM4** 391; tree to 30 m tall; lowland and hill forest; localities unclear.

175.62.1 **Pleiocarpidia enneandra** (Wight) K. Schum., **B25** 208, **TFM4** 392; *Aulocodiscus prennoides* Hook.*f*., **FMP2** 64; small tree to 16 m tall; lowland forest including swamps; Pn, Pk, Ph, Sl, Ml, Jh; endemic.

175.63.1 **Porterandia anisophyllea** (Jack *ex* Roxb.) Ridl., **W26** 45, **TFM4** 393; *Randia anisophyllea* (Jack *ex* Roxb.) Hook.*f*., **FMP2** 77; *Randia scortechinii* King & Gamble, **FMP2** 78; tree to 12 m tall; lowland and hill forest; Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.63.2 **Porterandia sessiliflora** Ridl., **W26** 46, **TFM4** 393; tree to 12 m tall; hill forest; twice from Pk.

175.64.1 **Prismatomeris glabra** (Korth.) Valeton, **J12** 54, **TFM4** 395; shrub to 4 m tall; lowland to montane forest; throughout.

175.64.2 **Prismatomeris griffithii** Ridl., **J12** 32, **TFM4** 395; shrub; dry deciduous forest and on limestone; Ps.

175.64.3 **Prismatomeris tetrandra** (Roxb.) K. Schum. ssp. **malayana** (Ridl.) J.T. Johanss., **J12** 29, **TFM4** 396; *Prismatomeris malayana* Ridl., **FMP2** 116; shrub to 5 m tall; rocky shores, lowland forest, limestone; throughout.

175.64.4 **Prismatomeris sp., TFM4** 395; ?*Coffea malayana* Ridl., **FMP2** 111; shrub to 2 m tall; lowland and hill forest, also on limestone; Ps, Pk, Sl, NS, Ml.

175.65.1 **Psychotria adenophylla** Wall., **TFM4** 398; *Psychotria siamensis* Ridl., **FMP2** 138; shrub or small tree; lowland forest; Ps, P. Langkawi.

175.65.2 **Psychotria albopedunculata** I.M. Turner, **T21** 27; *Cephaelis melanocarpa* Ridl., **FMP2** 144; shrub to 1 m tall; hill forest; Bt Tangga, NS; ?endemic.

175.65.3 **Psychotria angulata** Korth., **FMP2** 138, **TFM4** 398; *Psychotria griffithii* Hook.*f*. var. *angustifolia* Ridl., **FMP2** 137; shrub to 3 m tall; lowland forest, also on limestone; throughout.

175.65.4 **Psychotria atroviridis** Ridl., **FMP2** 140; subshrub to 30 cm tall; hill forest; Bt Tangga, NS; ?endemic.

175.65.5 **Psychotria birchiana** King & Gamble, **FMP2** 135; shrublet; montane forests; Pk, Sl; ?endemic.

175.65.6 **Psychotria brachybotrys** Ridl., **FMP2** 133; slender scandent shrub; montane forest; Ph, Sl; ?endemic.

175.65.7 **Psychotria calocarpa** Kurz, **FMP2** 133, **TFM4** 398; shrub; lowland forest; Kd, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.65.8 **Psychotria cantleyi** Ridl., **FMP2** 130; scandent shrub; lowland and hill forest; widespread; ?endemic.

175.65.9 **Psychotria condensa** King & Gamble, **FMP2** 129; epiphytic shrub; montane forest; Kd, Pk, Ph; ?endemic.

175.65.10 **Psychotria coriacea** Korth., **FMP2** 136; shrub; forest; Gg Puali, Jh.

175.65.11 **Psychotria cuspidella** Miq., **FMP2** 139; shrub; montane forest; Semangkok Pass, Sl; ?endemic.

175.65.12 **Psychotria fulva** Buch.-Ham. *ex* Hook.*f*., **FMP2** 136, **TFM4** 397; shrub; montane forest; Kl, Pk, Ph.

175.65.13 **Psychotria fulvoidea** King & Gamble, **FMP2** 136; small shrub; Pk; ?endemic.

175.65.14 **Psychotria griffithii** Hook.*f*., **FMP2** 137, **TFM4** 399; shrub or small tree; lowland forest; Tg, Pk, Sl, NS, Ml, Jh, Sp; endemic.

175.65.15 **Psychotria helferiana** Kurz, **FMP2** 134, **TFM4** 396; shrub; lowland and hill forest; Pn, Pk, Sl, Ml, Jh, Sp.

175.65.16 **Psychotria inaequalis** King & Gamble, **FMP2** 141; subshrub; Pk; ?endemic.

175.65.17 **Psychotria kunstleri** King & Gamble, **FMP2** 132; epiphyte; Pk.

175.65.18 **Psychotria lanceolaria** Ridl., **FMP2** 134; slender shrub; lowland forest; Sl; ?endemic.

175.65.19 **Psychotria lasiocephala** Ridl., **TFM4** 398; shrub; on limestone; Ps.

175.65.20 **Psychotria laxiflora** Blume, **FMP2** 133; slender climber; Pk.

175.65.21 **Psychotria maingayi** Hook.*f*., **FMP2** 131; slender climber; lowland forest, often near the sea; Sl southward; ?endemic.

175.65.22 **Psychotria malaccensis** I.M. Turner, **T21** 27; *Cephaelis griffithii* Hook.*f*., **FMP2** 144; shrublet; lowland forest; scattered.

175.65.23 **Psychotria malayana** Jack, **FMP2** 139, **TFM4** 397; *Psychotria stipulacea* Wall., **FMP2** 140.

175.65.24 **Psychotria megacarpa** Ridl., **FMP2** 140; shrub; montane forest; Gg Kerbau, Pk; ?endemic.

175.65.25 **Psychotria montana** Blume, **FMP2** 137, **TFM4** 397; *Becheria parviflora* Ridl., **FMP2** 21 in part; shrub; lowland to lower montane forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh.

175.65.26 **Psychotria morindiflora** Wall., **FMP2** 131; large woody climber; lowland forest; Pn, Pk; ?endemic.

175.65.27 **Psychotria multicapitata** King & Gamble; shrub; Pk; ?endemic.

175.65.28 **Psychotria naviculiformis** I.M. Turner, **T21** 27; *Cephaelis ridleyi* King, **FMP2** 144; shrub to 60 cm tall; montane forest; Pk, Sl; ?endemic.

175.65.29 **Psychotria obovata** Wall., **FMP2** 129; climbing shrub; lowlands; widespread and common.

175.65.30 **Psychotria ophirensis** I.M. Turner, **T21** 26; *Cephaelis angustifolia* Ridl., **FMP2** 145; sparsely-branched shrub to 50 cm tall; montane forest; NS, Ml, Jh; ?endemic.

175.65.31 **Psychotria ovoidea** Wall., **FMP2** 130; slender climber; lowland forest, on trees or the ground; Pk southward; ?endemic.

175.65.32 **Psychotria pachyphylla** (King & Gamble) Ridl., **FMP2** 129; large climbing shrub; hill forest; Pn.

175.65.33 **Psychotria penangiana** Hook.*f*., **FMP2** 132; shrubby climber; lowland forest; common and widespread; ?endemic.

175.65.34 **Psychotria pilulifera** King & Gamble, **FMP2** 130; small tree or climber; hill forest; Pk; ?endemic.

175.65.35 **Psychotria polytricha** Miq., **FMP2** 132; slender climber; on tree trunks in lowland forest; Pk.

175.65.36 **Psychotria porcata** I.M. Turner, **T21** 27; *Cephaelis elongata* Ridl., **FMP2** 145; montane forest; Semangkok Pass, Sl; ?endemic.

175.65.37 **Psychotria rhinocerotis** Reinw. *ex* Blume, **FMP2** 135, **TFM4** 396; shrub or small tree to 3 m tall; lowland forest; Ps, Kd, Kl, Pk, Ph.

175.65.38 **Psychotria ridleyi** King & Gamble, **FMP2** 133; climber; lowland and hill forest; scattered.

175.65.39 **Psychotria robusta** Blume, **TFM4** 397; shrub or small tree; lowland and hill forest; Tg, Ph, Jh.

175.65.40 **Psychotria rostrata** Blume, **FMP2** 134, **TFM4** 397; shrub or small tree to 3 m tall; lowland and hill forest; Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.65.41 **Psychotria rudis** Ridl., **FMP2** 138; small shrub; hill forest; Gg Jerai, Kd; ?endemic.

175.65.42 **Psychotria sarmentosa** Blume, **FMP2** 131; climber; lowland forest; widespread.

175.65.43 **Psychotria scortechinii** King & Gamble, **FMP2** 130; climber; Pk; ?endemic.

175.65.44 **Psychotria setistipula** Ridl., **FMP2** 138; shrub; montane forest; Gg Mengkuang Lebah, Sl; ?endemic.

175.65.45 **Psychotria singapurensis** (Ridl.) I.M. Turner, **T21** 27; *Cephaelis singapurensis* Ridl., **FMP2** 144; lowland and hill forest; Jh, Sp; ?endemic.

175.65.46 **Psychotria sohmerana** I.M. Turner, **T21** 26; *Psychotria minutiflora* (*non* Müll.Arg.) Ridl., **FMP2** 141; small shrub; montane forest; Genting Simpah, Sl; ?endemic.

175.65.47 **Psychotria subcoriacea** (Ridl.) I.M. Turner, **T21** 27; *Cephaelis subcoriacea* Ridl., **FMP2** 145; subshrub; montane forest; Gg Mengkuang Lebah, Sl; ?endemic.

175.65.48 **Psychotria tahanica** I.M. Turner, **T21** 26; *Cephaelis albiflora* Ridl., **FMP2** 146; shrub to 2 m tall; montane forest near streams; Gg Tahan, Ph; ?endemic.

175.65.49 **Psychotria triceps** (Ridl.) I.M. Turner, **T21** 27; *Cephaelis triceps* Ridl., **FMP2** 145; shrub to 1 m or more tall; montane forest; Sl; ?endemic.

175.65.50 **Psychotria viridiflora** Reinw. *ex* Blume, **FMP2** 139, **TFM4** 398; shrub or small tree; lowland forest, also on limestone; throughout.

175.65.51 **Psychotria vulpina** Ridl., **FMP2** 136; shrub; lowland forest; Kuala Lebir, Kl; ?endemic.

175.65.52 **Psychotria wrayi** King & Gamble, **FMP2** 141; shrub; Pk; ?endemic.

175.65.53 **Psychotria sp. 1**, **TFM4** 396; shrub to 3 m tall; lowland forest; Kl, Ph; ?endemic.

175.65.54 **Psychotria sp. 2**, **TFM4** 397; shrub to 3 m tall; lowland forest; Kl, Tg, Pk, Ph; ?endemic.

175.65.55 **Psychotria sp. 3**, **TFM4** 397; shrub to 3 m tall; lowland forest; Pk, Jh; ?endemic.

175.65.56 **Psychotria sp. 4**, **TFM4** 397; shrub or small tree to 6 m tall; hill forest; Sl; ?endemic.

175.65.57 **Psychotria sp. 5**, **TFM4** 397; shrub; lowland and hill forest; Pn, Sl; ?endemic.

175.65.58 **Psychotria sp. 6**, **TFM4** 397; shrub; lowland forest; Tg; ?endemic.

175.65.59 **Psychotria sp. 7**, **TFM4** 398; shrub; lowland swamp forest; Sg Kayu, Jh; ?endemic.

175.65.60 **Psychotria sp. 8**, **TFM4** 398; shrub; lowland forest; Kl, Pk; ?endemic.

175.65.61 **Psychotria sp. 9**, **TFM4** 398; shrub; lowland forest; Sp; ?endemic.

175.65.62 **Psychotria sp. 10**, **TFM4** 399; shrub; montane forest at 1300 m; Gg Padang, Tg; ?endemic.

175.65.63 **Psychotria sp. 11**, **TFM4** 399; small tree; montane forest at 1800 m; Cameron Highlands, Ph; ?endemic.

175.65.64 **Psychotria sp. 12**, TFM4 399; shrub; hill forest at 900 m; Gg Tahan, Ph; ?endemic.

175.66.1 **Psydrax maingayi** (Hook.*f.*) Bridson, **TFM4** 402; *Mesoptera maingayi* Hook.*f.*, **FMP2** 127; tree to 18 m tall; lowland to lower montane forest; Tg, Ph, Pk, Sl, NS, Ml, Jh; endemic.

175.66.2 **Psydrax nitidum** (Craib) K.M. Wong, **TFM4** 400; *Canthium didymum* sensu Ridl., **FMP2** 126 in part; small tree to 5 m tall; lowland forest including that on limestone; P. langkawi.

175.66.3 **Psydrax sp. 1**, **TFM4** 402; tree to 18 m tall; lowland and hill forest; widespread; ?endemic.

175.66.4 **Psydrax sp. 2**, **TFM4** 403; tree to 12 m tall; hill forest at 800–1100 m; Gg Jerai, Kd; endemic.

175.66.5 **Psydrax sp. 3**, **TFM4** 400; small tree to 6 m tall; montane forest at 1100–1300 m; Main Range; ?endemic.

175.66.6 **Psydrax sp. 4**, **TFM4** 401; small tree to 4 m tall; montane forest; Ph; ?endemic.

175.66.7 **Psydrax sp. 5**, **TFM4** 403; tree to 15 m tall; lowland forest, often near the coast; Pn, Pk, Ph, Jh.

175.66.8 **Psydrax sp. 6**, **TFM4** 400; tree to 9 m tall; montane forest; Ph, Sl; ?endemic.

175.66.9 **Psydrax sp. 7**, **TFM4** 403; tree to 15 m tall; lowland forest including swamps; Pk, Sl, Jh; ?endemic.

175.66.10 **Psydrax sp. 8**, **TFM4** 403; tree to 15 m tall; lowland and hill forest, also on limestone; widespread.

175.66.11 **Psydrax sp. 9**, **TFM4** 404; tree to 16 m tall; montane forest; Cameron Highlands, Ph; ?endemic.

175.66.12 **Psydrax sp. 10**, **TFM4** 404; tree to 23 m tall; lowland forest; widespread.

175.66.13 **Psydrax sp. 11**, **TFM4** 402; small tree to 9 m tall; freshwater and mangrove swamps; Ph, Jh, Sp.

175.66.14 **Psydrax sp. 12**, **TFM4** 401; small tree; on limestone; P. Langkawi; ?endemic.

175.67.1 **Rennellia elliptica** Korth., **J14** 7; *Rennellia speciosa* (Wall. *ex* Kurz) Hook.*f.* var. *elongata* King & Gamble, **FMP2** 120; ?*Rennellia speciosa* var. *angustifolia* Ridl., **FMP2** 120; *Rennellia elongata* (King & Gamble) Ridl., **TFM4** 405; *Rennellia paniculata* King & Gamble var. *condensa* K.M. Wong, **TFM4** 405; shrub or tree to 8 m tall; lowland to lower montane forest at 1500 m; widespread.

175.67.2 **Rennellia microcephala** (Ridl.) K.M. Wong, **TFM4** 405; *Myrioneuron microcephalum* Ridl., **FMP2** 57; shrub to 4 m tall; lowland and hill forest to 800 m; Kd, Kl, Tg, Ph; endemic.

175.67.3 **Rennellia morindiformis** (Korth.) Ridl., **J14** 15; *Rennellia paniculata* King & Gamble, **FMP2** 119, **TFM4** 405; *Rennellia sp.*, **TFM4** 405; shrub or tree to 8 m tall; lowland to lower montane forest; once each from Kl, Pk, Ph.

175.67.4 **Rennellia speciosa** (Wall. *ex* Kurz) Hook.*f.*, **FMP2** 120, **J14** 7, **TFM4** 405; shrub or tree to 7 m tall; lowland and hill forest; south and east of Malaya.

175.68.1 **Rothmannia kuchingensis** (J.J. Sm.) K.M. Wong, **W30** 270, **TFM4** 406; tree to 6 m tall; on sandstone plateaux; Ulu Endau, Jh.

175.68.2 **Rothmannia macrophylla** (R.Br. *ex* Hook.*f.*) Bremek., **W26** 48, **TFM4** 406; *Randia macrophylla* R.Br. *ex* Hook.*f.*, **FMP2** 78; shrub to 3 m tall; lowland and hill forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.68.3 **Rothmannia malayana** K.M. Wong, **W26** 51, **TFM4** 406; tree to 10 m tall; lowland forest; once each from Kl and Ph; endemic.

175.68.4 **Rothmannia schoemannii** (Teijsm. & Binn.) Tirveng., **W26** 49, **TFM4** 406; *Randia exaltata* Griff., **FMP2** 78; tree to 30 m tall; lowland and hill forest; P. Langkawi, Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml.

175.69.1 **Saprosma glomerulata** King & Gamble, **FMP2** 170, **TFM4** 407; shrub to 3 m tall; lowland to lower montane forest; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp; endemic.

175.69.2 **Saprosma indica** *sensu* Ridl., **FMP2** 170, **TFM4** 407; *Amaracarpus saxicola* Ridl., **FMP2** 172, **C15** 141; shrub to 3 m tall; on limestone; Ps, Kd, Kl, Pk, Ph.

175.69.3a **Saprosma pubescens** Ridl. var. **hirsuta** Ridl., **FMP2** 171, **TFM4** 408; shrub; lowland and hill forest; Tg, Ml; endemic.

175.69.3b **Saprosma pubescens** Ridl. var. **pubescens**, **FMP2** 171, **TFM4** 408; shrub to 3 m tall; lowland and hill forest; Ph, NS, Ml; endemic.

175.69.4 **Saprosma scortechinii** King & Gamble, **FMP2** 170, **TFM4** 407; shrub to 2 m tall; lowland and hill forest to 1000 m; Kd, Tg, Pk, Ph; endemic.

175.69.5 **Saprosma ternata** (Wall.) Hook.*f*., **FMP2** 170, **TFM4** 407, G01 92; shrub to 3 m tall; lowland and hill forest; Pn, Kl, Pk, Ph, Sl, Jh.

175.69.6 **Saprosma sp.** 1, **TFM4** 407; shrub; lowlands; Sg Serai, Kl; ?endemic.

175.69.7 **Saprosma sp.** 2, **TFM4** 407; shrub; lowland and hill forest; Kl, Pk, Ph, Sl; ?endemic.

175.69.8 **Saprosma sp.** 3, **TFM4** 407; shrub; lowland forest; Krau, Ph; ?endemic.

175.70.1 **Scyphiphora hydrophyllacea** C.F. Gaertn., **FMP2** 89, **TFM4** 408; tree to 6 m tall, sometimes with stilt roots; sea shores and mangrove swamps; all coasts except Pk.

175.71.1 **Spermacoce articularis** L.*f*., **S27** 363; *Borreria articularis* (L.*f*.) F.N. Williams, **K09** 152; *Borreria hispida auct. non* (L.) K. Schum., **FMP2** 175; rough wiry herb; sandy waste ground, common near the sea; throughout.

175.71.2 **Spermacoce assurgens** Ruiz & Pav., **F16** 118, **B39** 315; *Borreria laevis auct. non* (Lam.) Griseb., **M28** 132, **M44** 496; herb; waste places; widespread; naturalized from tropical America.

175.71.3 **Spermacoce exilis** (L.O. Williams) C.D. Adams, **B09** 316; *Borreria setidens* (Miq.) Bold., **FMP2** 177; *Borreria repens* DC., **F19** 133; *Borreria ocymoides auct. non* (Burm.*f*.) DC., **K09** 152; *Spermacoce mauritiana* Gideon, **V09** 547; herb, often creeping, ascending to 30 cm; waste places, garden weed; throughout.

175.71.4 *Borreria laevicaulis* (Miq.) Ridl., **FMP2** 176; wiry herb to 50 cm tall; roadsides, waste places; common throughout.
The correct name in *Spermacoce* for this species remains unknown to me.

175.71.5 **Spermacoce latifolia** Aubl., **D21** 1051; *Borreria latifolia* (Aubl.) K. Schum., **FMP2** 175; *Borreria alata* (Aubl.) DC., **M47** 492; herb to 60 cm tall; waste places; widespread; naturalized from tropical America.

175.71.6 **Spermacoce parviceps** (Ridl.) I.M. Turner, **T24** 222; *Borreria parviceps* Ridl., **FMP2** 176; slender erect herb; roadsides; Tg, NS, Ml, Sp; ?endemic.

175.71.7 **Spermacoce pilulifera** (Ridl.) I.M. Turner, **T24** 222; *Borreria pilulifera* Ridl., **FMP2** 176; slender herb about 30 cm tall; roadsides; Klang, Gates, Sl; ?endemic.

175.72.1 **Streblosa polyantha** Korth., **B28** 176; *Streblosa pubescens* Ridl., **FMP2** 148; *Streblosa hirta* Ridl., **FMP2** 149; herb to 25 cm tall; Pn, Pk.

175.72.2 **Streblosa microcarpa** Ridl., **FMP2** 148, **B28** 164; herb to 60 cm tall; Pn, Pk.

175.73.1 **Tarenna adangensis** (Ridl.) Ridl., **FMP2** 107, **TFM4** 412; *Tarenna calcarea* Ridl., **FMP2** 108; shrub to 6 m tall; on limestone; Ps, P. Langkawi, Kl, Pk, Sl.

175.73.2 **Tarenna adpressa** (King) Merr., **TFM4** 411; *Tarenna papillosa* Ridl., **FMP2** 103; *Stylocoryna adpressa* King, **FMP2** 110; shrub to 4 m tall; peat swamp forest; Ph, Sl, Jh; endemic.

175.73.3 **Tarenna angustifolia** (King) Merr., **TFM4** 412; *Stylocoryna angustifolia* King, **FMP2** 109; shrub to 3 m tall; on limestone; Kl, Pk, Ph, Sl.

175.73.4 **Tarenna costata** (Miq.) Merr., **TFM4** 415; *Stylocoryna costata* Miq., **FMP2** 109; shortly buttressed tree to 30 m tall; lowland and hill forest; Ph, Sl, NS, Ml, Jh, Sp.

175.73.5 **Tarenna curtisii** (King) F.N. Williams, **FMP2** 107, **TFM4** 412; shrub to 3 m tall; on limestone; P. Langkawi.

175.73.6 **Tarenna evansii** Ridl., **FMP2** 103, **TFM4** 410; subshrub to 50 cm tall; montane forest; Gg Senyum, Ph; endemic.

175.73.7 **Tarenna fragrans** (Nees) Koord. & Valeton, **TFM4** 411; *Stylocoryna fragrans* (Nees) DC., **FMP2** 108; shrub or small tree to 8 m tall; lowland forest, often on river banks; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.73.8 **Tarenna glabra** Ridl., **FMP2** 106, **TFM4** 412; shrub to 4 m tall; lowland and hill forest; Kl, Tg, Pk; endemic.

175.73.9 **Tarenna hispidula** Craib, **TFM4** 410; *Tarenna adpressa auct. non* (King) Merr., **C14** 149; shrub; lowland forest; P. Langkawi.

175.73.10 **Tarenna insularis** (Ridl.) Ridl., **FMP2** 107, **TFM4** 412; shrub to 2 m tall; lowland forest; Ps, P. Langkawi.

175.73.11 **Tarenna lancifolia** Ridl., **FMP5** 316, **TFM4** 411; shrub; hill forest at 600–1000 m; Gg Jerai, Kd, Gg Tahan, Ph; endemic.

175.73.12 **Tarenna longifolia** (G. Don) Ridl., **FMP2** 104, **TFM4** 409; shrub to 3 m tall; lowland forest; Pn, Pk; endemic.

175.73.13 **Tarenna maingayi** (Hook.*f.*) Merr., **TFM4** 410; *Stylocoryna maingayi* (Hook.*f.*) King, **TFM2** 110; shrub to 3 m tall; lowland and hill forest; Sl, NS, Ml, Jh; endemic.

175.73.14 **Tarenna mollis** (Wall. *ex* Hook.*f.*) B.L. Rob., **TFM4** 416; *Stylocoryna mollis* (Wall. *ex* Hook.*f.*) King, **FMP2** 109; shrub or tree to 16 m tall; lowland to lower montane forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.73.15 **Tarenna mussaendoides** (Craib) K.M. Wong, **TFM4** 411; shrub or small tree; on limestone; Kaki Bukit, Ps.

175.73.16 **Tarenna odorata** (Roxb.) B.L. Rob., **FMP2** 105, **TFM4** 410; *Tarenna grandifolia* (Hook.*f.*) Ridl., **FMP2** 104; shrub or small tree to 6 m tall; lowland forest including swamps; Pn, Pk, Sl, Ml, Jh, Sp; ?endemic.

175.73.17 **Tarenna pulchra** (Ridl.) Ridl., **FMP2** 104, **TFM4** 410; shrub to 3 m tall; montane forest above 1200 m; Ph, Sl.

175.73.18 **Tarenna ridleyi** (H. Pearson *ex* King) Ridl., **FMP2** 106 in part, **TFM4** 412; shrub; lowland forest; Ph, Sp; endemic.

175.73.19 **Tarenna rudis** Ridl., **FMP2** 103, **TFM4** 409; shrub to 4 m tall; lowland forest; Sl; endemic.

175.73.20 **Tarenna stellulata** (Hook.*f.*) Ridl., **FMP2** 106, **TFM4** 412; shrub to 4 m tall; lowland to montane forest at 1200 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.73.21 **Tarenna wallichii** (Hook.*f.*) Ridl., **FMP2** 106, **TFM4** 413; shrub to 3 m tall; lowland forest; Pn, Pk, Ml.

175.73.22 **Tarenna wrayi** (King) Ridl., **FMP2** 105, **TFM4** 411; shrub; Pk; endemic.

175.73.23 **Tarenna yappii** (King) Ridl., **FMP2** 105, **TFM4** 411; shrub; Pk; endemic.

175.73.24 **Tarenna sp. 1**, **TFM4** 409; shrub; Ulu Brang, Tg; ?endemic.

175.73.25 **Tarenna sp. 2**, **TFM4** 409; hill forest at 680 m; Gg Tapis, Ph; ?endemic.

175.73.26 **Tarenna sp. 3**, **TFM4** 410; shrub; lowland forest; Gg Lang, Kd; ?endemic.

175.73.27 **Tarenna sp. 4**, **TFM4** 410; shrub to 2 m tall; lowland forest; Tg, Ph, Jh; ?endemic.

175.73.28 **Tarenna sp. 5**, **TFM4** 411; shrub; lowland forest; Bubu F.R., Pk; endemic.

175.73.29 **Tarenna sp. 6**, **TFM4** 411; shrub; montane forest; Fraser's Hill, Ph; endemic.

175.73.30 **Tarenna sp. 7**, **TFM4** 411; shrub to 2 m tall; lower montane forest; Tg, Ph; endemic.

175.73.31 **Tarenna sp. 8**, **TFM4** 412; shrub or small tree to 8 m tall; lowland and hill forest, also limestone; Ps, Kd, Pn, Kl, Pk, Ph, Sl, NS, Jh; endemic.

175.73.32 **Tarenna sp. 9**, **TFM4** 412; shrub to 4.5 m tall; on limestone; Lenggong, Pk; endemic.

175.73.33 **Tarenna sp. 10**, **TFM4** 413; shrub to 3 m tall; on limestone; Pk; endemic.

175.73.34 **Tarenna sp. 11**, **TFM4** 413; shrub to 3 m tall; Pasoh F.R., NS; ?endemic.

175.73.35 **Tarenna sp. 12**, **TFM4** 413; shrub to 2 m tall; hill forest; Ulu Langat, Sl; ?endemic.

175.73.36 **Tarenna sp. 13**, **TFM4** 414; shrub to 3 m tall; lowland and hill forest; Ph; ?endemic.

175.73.37 **Tarenna sp. 14**, **TFM4** 415; shrub; montane forest; Gg Tahan, Ph; ?endemic.

175.73.38 **Tarenna sp. 15**, **TFM4** 415; shrub; montane forest at 1200 m; Gg Padang, Tg; ?endemic.

175.73.39 **Tarenna sp. 16**, **TFM4** 412; tree to 8 m tall; on limestone; Batu Caves, Sl; endemic.

175.74.1 **Timonius compressicaulis** (Miq.) Boerl., **W27** 514, **TFM4** 417; *Timonius finlaysonianus* Hook.*f*., **FMP2** 113; shrub or small tree to 7 m tall; sandy and rocky shores; all coasts.

175.74.2a **Timonius corneri** K.M. Wong var. **corneri**, **W27** 500, **TFM4** 419; tree to 18 m tall; lowland and hill forest; Kl, Tg.

175.74.2b **Timonius corneri** K.M. Wong var. **penangianus** (Ridl.) K.M. Wong, **W27** 502, **TFM4** 419; *Timonius wallichianus* (Korth.) Valeton var. *penangianus* Ridl., **FMP2** 116; tree to 18 m tall; hill and montane forest; Kd, Pn, Pk, Ph.

175.74.3 **Timonius diffusus** Ridl., **FMP2** 115, **W27** 503, **TFM4** 417; tree to 10 m tall; montane forest at 1000–1500 m; Ph, Sl; endemic.

175.74.4 **Timonius flavescens** (Jack) Baker, **W27** 504, **TFM4** 418; *Timonius peduncularis* Ridl., **FMP2** 113; tree to 12 m tall; on peaty soils in the lowlands and mountains; throughout.

175.74.5 **Timonius glabrior** (Valeton) K.M. Wong, **W27** 505, **TFM4** 417; tree to 10 m tall; lowland forest; Pk; endemic.

175.74.6 **Timonius laxus** King & Gamble, **FMP2** 115, **W27** 506, **TFM4** 418; tree to 10 m tall; lowland forest; only known from type, Ulu Bubong, Pk; endemic.

175.74.7 **Timonius montanus** Ridl., **FMP2** 114, **W27** 506, **TFM4** 418; shrub to 3 m tall; montane forest above 1200 m; Gg Lawit, Tg; Gg Tahan & Gg Tapis, Ph; endemic.

175.74.8 **Timonius oreophilus** Ridl., **FMP2** 114, **W27** 506, **TFM4** 418; shrub to 6 m tall; hill and montane forest above 700 m; Ph, Sl; endemic.

175.74.9 **Timonius wallichianus** (Korth.) Valeton, **FMP2** 116, **W27** 507, **TFM4** 417; tree to 7 m tall; lowland forests, common in secondary vegetation; Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.74.10 **Timonius wrayi** King & Gamble, **FMP2** 115, **W27** 512, **TFM4** 419; tree to 15 m tall; lowland and hill forest; Tg, Pk, Ph, Jh; endemic.

175.74.11 **Timonius sp. A**, **W27** 509, **TFM4** 418; shrub to 3 m tall; lowland forest; NS; ?endemic.

175.74.12 **Timonius sp. B**, **W27** 509, **TFM4** 418; tree to 10 m tall; Jh; ?endemic.

175.74.13 **Timonius sp. C**, **W27** 512, **TFM4** 418; ?shrub; hill forest; Larut, Pk; ?endemic.

175.74.14 **Timonius sp. D**, **W27** 512, **TFM4** 417; ?shrub; Larut, Pk; ?endemic.

175.75.1 **Uncaria acida** (W. Hunt.) Roxb., **R17** 80; *Uncaria ovalifolia* Roxb., **FMP2** 14; slender liana; damp or swampy lowland forest; south of Malaya.

175.75.2 **Uncaria attenuata** Korth., **FMP2** 16, **R17** 79; slender liana; lowland forest; scattered.

175.75.3 **Uncaria barbata** Merr., **R17** 80; liana; localities uncertain.

175.75.4 **Uncaria borneensis** Havil., **R17** 79; liana; localities uncertain.

175.75.5 **Uncaria callophylla** Blume *ex* Korth., **R17** 85; *Uncaria wrayi* King & Gamble, **FMP2** 14; *Uncaria jasminiflora* Hook.*f*., **FMP2** 15; liana; lowland forests; widespread.

175.75.6 **Uncaria canescens** Korth., **FMP2** 16, **R17** 80; slender liana; lowland forest; Pn, Pk.

175.75.7a **Uncaria cordata** (Lour.) Merr. var. **cordata**, **R17** 75; *Uncaria pedicellata* Roxb., **FMP2** 12; liana; lowland forest; widespread.

175.75.7b **Uncaria cordata** (Lour.) Merr. var. **ferruginea** (Blume) Ridsdale, **R17** 76; *Uncaria sclerophylla auct. non* Roxb., **FMP2** 12; big liana; common in lowland forest; widespread.

175.75.8 **Uncaria elliptica** R.Br. *ex* G. Don, **R17** 81; *Uncaria dasyoneura* Korth., **FMP2** 16; liana; lowland forest; Pn, Pk, Ml.

175.75.9 **Uncaria gambir** (W. Hunt.) Roxb., **FMP2** 15, **R17** 82; liana; established in southern lowlands as relic of former cultivation; naturalized but origins obscure.

175.75.10 **Uncaria homomalla** Miq., **R17** 95; *Uncaria parviflora* (Ridl.) Ridl., **FMP2** 12; liana; open country; Ps.

175.75.11 **Uncaria kunstleri** King, **FMP2** 14, **R17** 80; big liana; lowland forest including peat swamps; Pk.

175.75.12b **Uncaria lanosa** Wall. var. **ferrea** (Blume) Ridsdale, **R17** 87; *Uncaria ferrea* (Blume) DC., **FMP2** 14 incl. var. *tomentosa* King; slender hairy liana; lowland forest margins; widespread.

175.75.12b **Uncaria lanosa** Wall. var. **glabrata** (Blume) Ridsdale, **R17** 86; *Uncaria glabrata* Blume, **FMP2** 14; slender liana; lowland forest; south of Malaya.

175.75.12c **Uncaria lanosa** Wall. var. **lanosa**, **R17** 86; *Uncaria lanosa* Wall., **FMP2** 12; hairy liana; forest margins; Pn, Pk, Ph, Ml.

175.75.13a **Uncaria longiflora** (Poir.) Merr. var. **longiflora**, **R17** 82; *Uncaria trinervis* Havil., **FMP2** 15; slender liana; hill forest; Pn.

175.75.13b **Uncaria longiflora** (Poir.) Merr. var. **pteropoda** (Miq.) Ridsdale, **R17** 82; *Uncaria pteropoda* Miq., **FMP2** 15; big liana; lowland forest margins; widespread.

175.75.14 **Uncaria roxburghiana** Korth., **FMP2** 11, **R17** 89; slender liana; lowland forest margins; widespread.

175.76.1 **Urophyllum blumeanum** (Wight) Hook.*f*., **TFM4** 421; *Urophyllum glabrum* Wall. var. *blumeanum sensu* Ridl., **FMP2** 69; shrub or small tree to 8 m tall; lowland and hill forest to 900 m; throughout.

175.76.2 **Urophyllum corymbosum** (Blume) Korth., **FMP2** 67, **TFM4** 422; *Maschalocorymbus corymbosus* (Blume) Bremek.; **B40** 182, **B03** 307; shrub or small tree to 9 m tall; lowland to lower montane forest at 1300 m; Ps, Ph, Sl, NS, Jh, Sp.

175.76.3 **Urophyllum ferrugineum** King & Gamble, **FMP2** 67, **TFM4** 421; shrub to 2 m tall; lowland to lower montane forest at 1300 m; Pk, Jh; endemic.

175.76.4 **Urophyllum glabrum** Wall., **FMP2** 68, **TFM4** 423; shrub or small tree to 5 m tall; lowland to lower montane forest at 1400 m; throughout.

175.76.5 **Urophyllum griffithianum** (Wight) Hook.*f*., **FMP2** 69, **TFM4** 423; shrub or small tree to 5 m tall; lowland and hill forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.76.6 **Urophyllum hirsutum** (Wight) Hook.*f*., **FMP2** 66, **TFM4** 422; shrub to 3 m tall; lowland and hill forest to 1000 m; throughout.

175.76.7 **Urophyllum lasiocarpum** Ridl., **FMP2** 66, **TFM4** 422; shrub to 2 m tall; lowland forest; Pk; endemic.

175.76.8 **Urophyllum leucophloem** Ridl., **TFM4** 423; *Urophyllum coriaceum* Ridl., **FMP2** 68; shrub or small tree to 6 m tall; hill and montane forest to 1500 m; Tg, Pk, Ph, Sl, Ml; endemic.

175.76.9 **Urophyllum macrophyllum** Korth., **FMP2** 66, **TFM4** 422; shrub to 4 m tall; lowland to lower montane forest at 1300 m; Kl, Tg, Pk, Ph, Sl, NS.

175.76.10 **Urophyllum streptopodium** Wall. *ex* Hook.*f*., **FMP2** 67, **TFM4** 421; shrub or small tree to 7 m tall; lowland to lower montane forest at 1200 m; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

175.76.11 **Urophyllum trifurcum** H. Pearson *ex* King & Gamble, **FMP2** 68, **TFM4** 422; shrub or small tree to 15 m tall; lowland to lower montane forest at 1200 m; Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp; endemic.

175.76.12 **Urophyllum umbellulatum** Miq., **FMP2** 68, **TFM4** 421; shrub to 4 m tall; lowland to hill forest; Kd, Pn, Sl, NS.

175.76.13 **Urophyllum villosum** Wall., **FMP2** 65, **TFM4** 422; *Maschalocorymbus villosus* (Wall.) Bremek., **B22** 182; shrub or small tree to 6 m tall; lowland and hill forest; Kd, Pn, Tg, Pk, Ph; endemic.

Bremekamp [**B24** 189] also mentions one specimen (Holttum 10795) of *Leucolophus tobingensis* (Miq.) Bremek. from Gg Belumut, Jh.

175.76.14 **Urophyllum sp. 1**, **TFM4** 421; shrub; hill forest; Ulu Temango, Pk; ?endemic.

175.76.15 **Urophyllum sp. 2**, **TFM4** 421; shrub to 5 m tall; lowland to lower montane forest at 1300 m; Tg, Ph, Sl, Jh, Sp.

175.76.16 **Urophyllum sp. 3**, **TFM4** 421; shrub; hill forest; Ulu Brang, Tg; ?endemic.

175.76.17 **Urophyllum sp. 4**, **TFM4** 422; shrub to 3 m tall; lowland forest; Kl, Jh; ?endemic.

175.76.18 **Urophyllum sp. 5**, **TFM4** 422; shrub to 3 m tall; lowland forest; Pn, Ph; ?endemic.

175.76.19 **Urophyllum sp. 6**, **TFM4** 422; shrub or small tree to 10 m tall; lowland and hill forest; Tg, Ph, Jh; endemic.

175.76.20 **Urophyllum sp. 7**, **TFM4** 423; shrub to 2 m tall; montane forest; Tg, Ph; ?endemic.

175.76.21 **Urophyllum sp. 8**, **TFM4** 423; shrub to 4 m tall; lowland and hill forest; Kl, Pk.

175.76.22 **Urophyllum sp. 9**, **TFM4** 423; shrub to 4 m tall; lowland to lower montane forest at 1300 m; Ph, P. Tioman, Sl; ?endemic.

175.76.23 **Urophyllum sp. 10**, **TFM4** 424; shrub or small tree to 9 m tall; lowland and hill forest; Tg, Ph, Jh, Sp; ?endemic.

175.76.24 **Urophyllum sp. 11**, **TFM4** 422; shrub to 4 m tall; lowland forest; Tg, Ph; ?endemic.

175.76.25 **Urophyllum sp. 12**, **TFM4** 421; *Urophyllum hirsutum* (Wight) Hook.*f*. var. *longifolium* Ridl., **FMP2** 67; shrub to 2 m tall; lowland to hill forest; Jh.

175.76.26 **Urophyllum sp. 13**, **TFM4** 421; shrub to 2 m tall; hill forest; Ulu Brang, Tg; ?endemic.

175.77.1 **Wendlandia burkillii** Cowan, **TFM4** 424; *Wendlandia paniculata* sensu Ridl., **FMP2** 19; tree to 25 m tall; montane forest above 1500 m; Main Range.

175.77.2 **Wendlandia glabrata** DC., **TFM4** 425; tree to 30 m tall; montane forest above 1500 m; Main Range.

175.77.3 **Wendlandia ternifolia** Cowan, **H35** 108, **TFM4** 424; shrub to 5 m tall; rocky coasts; scattered.

175.78.1 **Xanthophytum biceps** Ridl., **FMP5** 316; shrublet to 20 cm tall; Ulu Tahan, Ph.
Excluded from *Xanthophytum* by **A18**.

175.78.2 **Xanthophytum capitellatum** Ridl., **FMP5** 316, **A18** 483; *Xanthophytum capitatum* (*non* Valeton) Ridl., **FMP2** 55; slender woody-stemmed "herb" to 30 cm tall; lowland forest; Kl, Tg; endemic.

175.79.1 **Zuccarinia macrophylla** Blume, **TFM4** 425; small tree; lowland forest; P. Aor, Jh.

176. RUTACEAE

176.1.1 **Acronychia pedunculata** (L.) Miq., **H19** 549; *Acronychia laurifolia* Blume, **FMP1** 347, **TFM1** 371; tree to 30 m tall; lowland and hill forest; P. Langkawi, Kd, Pn, Pk, Ph, Sl, Jh.

176.2.1 **Atalantia monophylla** (L.) DC., **FMP1** 356, **TFM1** 373; spiny shrub to 6 m tall; rocky and sandy coasts, dry open places; commonest in the north.

176.2.2 **Atalantia roxburghiana** Hook.*f*., **FMP1** 357, **TFM1** 373; weakly spiny shrub; open country, also on limestone; Pk, Ph, Ml, NS; ?endemic.

176.3.1 **Burkillanthus malaccensis** (Ridl.) Swingle, **TFM1** 373; *Citrus malaccensis* Ridl., **FMP1** 359; sparsely thorny tree to 12 m tall; lowland forest; Ph, Sl, Ml.

176.4.1 **Citrus aurantifolia** (Christm.) Swingle, **TFM1** 375; small tree; perhaps wild.

176.4.2 **Citrus halimii** B.C. Stone, **S68** 106, **S66** 123; *Citrus sp. A*, **TFM1** 375; tree to 23 m tall; lower montane forest at 600–1200 m, lower on limestone; Kd, Pk, Ph, NS.

176.4.3 **Citrus hystrix** DC., **FMP1** 358, **TFM1** 375; small tree; probably wild.

176.4.4 **Citrus macroptera** Montrouz., **TFM1** 374; small tree; lowland forest; northern half of the Peninsula.

176.5.1 **Clausena excavata** Burm.*f.*, **FMP1** 352, **TFM1** 375; foetid shrub or small tree; lowland forest margins and open places; throughout.

176.5.2 **Clausena harmandiana** (Pierre) Pierre, **M53** 124; *Clausena macrophylla auct. non* Hook.*f.*, **TFM1** 376; small tree; rare in N. Malaya.

176.6.1 **Fortunella polyandra** (Ridl.) Tanaka, **TFM1** 380; *Atalantia polyandra* Ridl., **FMP5** 295; shrub; lowlands; once each from Pk, Ml and Jh; ?endemic.

176.7.1a **Glycosmis chlorosperma** Spreng. var. **angustifolia** Narayanas., **S60** 3; shrub; lowland forest; Pk.

176.7.1b **Glycosmis chlorosperma** Spreng. var. **chlorosperma**, **TFM1** 382, **S46** 93; *Glycosmis malayana* Ridl., **FMP1** 350; *Glycosmis monticola* Ridl., **FMP1** 350, TFM1 382; shrub; lowland to montane forest; widespread.

176.7.1c **Glycosmis chlorosperma** Spreng. var. **lindleyana** (Swingle) B.C. Stone, **S60** 3; *Glycosmis macrophylla* [*non* (Blume) Miq.] Lindl., **FMP1** 349; *Glycosmis lindleyana* Swingle, **TFM1** 381; shrub; hill forest; Pn, Pk; endemic variety.

176.7.1d **Glycosmis chlorosperma** Spreng. var. **macrorachis** (King) B.C. Stone, **S60** 3; shrub; Pn; endemic variety.

176.7.1e **Glycosmis chlorosperma** Spreng. var. **paraphyllophora** B.C. Stone, **S60** 3; shrub; Pn.

176.7.2 **Glycosmis crassifolia** Ridl., **FMP1** 349, **TFM1** 381, **S63** 124; small tree; once each from Ml and Ph; endemic.

176.7.3 **Glycosmis collina** B.C. Stone, **S60** 4, **S66** 124; *Glycosmis macrocarpa auct. non* Wight, **FMP1** 349, **TFM1** 381; small tree; lower montane forest; Gg Batu Puteh, Pk, Fraser's Hill, Ph; endemic.

176.7.4 **Glycosmis decipiens** B.C. Stone, **TFM1** 381, **S46** 106, **S66** 125; *Phoenicimon rubiginosus* Ridl., **FMP5** 301; small shrub to 6 m tall; lowland to lower montane forest; Tg, Ph, P. Tioman, NS, Jh.

176.7.5 **Glycosmis lanceolata** Spreng., **TFM1** 381; *Glycosmis citrifolia* (Willd.) Lindl., **FMP1** 349 in part; small tree; open country; Kl to Sp.

176.7.6 **Glycosmis macrophylla** (Blume) Miq., **S66** 125; *Glycosmis sapindoides* Lindl. *ex* Wall., **FMP1** 351, **TFM1** 381, **S60** 34; *Glycosmis elata* Ridl., **FMP1** 351, **TFM1** 381; shrub; lowland forest; P. Langkawi, Pn, Kl, Tg, Pk.

176.7.7a **Glycosmis mauritiana** (Lam.) Tanaka var. **insularis** (Kurz) Tanaka, **S60** 14; shrub; once from Bt Sebukor, Ml.

176.7.7b **Glycosmis mauritiana** (Lam.) Tanaka var. **mauritiana**, **S60** 13, **S66** 124; *Glycosmis rupestris* Ridl., **FMP1** 350, **TFM1** 381; shrub; usually on limestone; Ps, P. Langkawi, Kd, Pn, Kl, Pk.

176.7.7c **Glycosmis mauritiana** (Lam.) Tanaka var. **tomentosa** (Ridl.) B.C. Stone, **S60** 14; *Glycosmis rupestris* Ridl. var. *tomentosa* Ridl., **FMP1** 350; shrub; P. Langkawi; endemic variety.

176.7.8 **Glycosmis pentaphylla** (Retz.) DC., **TFM1** 382, **S46** 87, **S60** 16, **S66** 125; *Glycosmis citrifolia auct. non* Lindl., **FMP1** 349 in part; small shrub; P. Langkawi, Kd, Kl.

176.7.9 **Glycosmis perakensis** Narayanas., **TFM1** 381, **S60** 16, **S66** 125; shrub, possibly rheophytic; Pk, Ph; endemic.

176.7.10 **Glycosmis puberula** Lindl., **FMP1** 351, **TFM1** 381, **S66** 124; shrub; forest, including that on limestone; Pn, Pk.

176.7.11 **Glycosmis stenura** B.C. Stone, **S60** 19; shrub to 4 m tall; only known from Gg Lang, Kd; endemic.

176.7.12 **Glycosmis tomentella** Ridl., **FMP1** 350, **TFM1** 382, **S60** 21, **S66** 126; shrub; montane forest; Gg Menuang Gasing, Sl.

176.7.13a **Glycosmis trichanthera** Guillaumin var. **kelantanica** (B.C. Stone) B.C. Stone, **S60** 22, **S66** 125; *Glycosmis calcicola* B.C. Stone var. *kelantanica* B.C. Stone, **TFM1** 381, **C15** 152; shrub to 3 m tall; on limestone; Kl; endemic variety.

176.7.13b **Glycosmis trichanthera** Guillaumin var. **trichanthera**, **S60** 21, **S66** 125; *Glycosmis calcicola* B.C. Stone var. *calcicola*, **TFM1** 381, **C15** 152; shrub to 3 m tall; on limestone; P. langkawi, Pk, Sl.

176.8.1 **Luvunga crassifolia** Tanaka; *Luvunga eleutherandra* Dalzell, **FMP1** 355; big liana with hooks; swampy lowland forest; Pk, Sp.

176.8.2 **Luvunga scandens** Buch.-Ham., **FMP1** 355; liana; lowland and hill forest; widespread.

176.9.1 **Maclurodendron magnificum** T.G. Hartley, **H22** 15, **S66** 127; *Acronychia sp. nov.*; **S48** 252; tree to 4.5 m tall; upper montane forest at 1500 m; known only from the summit of Gg Ulu Kali, Ph; endemic.

176.9.2 **Maclurodendron porteri** (Hook.*f.*) T.G. Hartley, **H22** 8; *Acronychia porteri* Hook.*f.*, **FMP1** 348, **TFM1** 371; tree to 25 m tall; lowland to lower montane forest; throughout.

176.10.1 **Melicope accedens** (Blume) T.G. Hartley, **H23** 67, **S66** 132; *Euodia pilulifera* King, **FMP1** 344, **TFM1** 377; *Euodia latifolia auct. non* DC., **FMP1** 342 in part, **TFM1** 378 in part; shrub to 5 m tall; montane forest; Kl, Pk, Ph, NS; endemic.

176.10.2 **Melicope corneri** T.G. Hartley, **S66** 131; *Euodia latifolia auct. non* DC., **FMP1** 342 in part, **TFM1** 378 in part; shrub to 7.5 m tall; lowland and hill forest to 750 m; Ph, Sl, NS, Jh; endemic.

176.10.3 **Melicope glabra** (Blume) T.G. Hartley, **H23** 60, **S66** 130; *Euodia glabra* (Blume) Blume, **FMP1** 342, **TFM1** 377; tree to 25 m tall; lowland forest; widespread.

176.10.4 **Melicope hookeri** T.G. Hartley, **H23** 70, **S66** 133; *Euodia robusta* Hook.*f*., **FMP1** 343, **TFM1** 379; tree to 6 m tall; lowlands and hills; NS, Sp.

176.10.5 **Melicope latifolia** (DC.) T.G. Hartley, **H23** 72; tree to 20 m tall; lowland to lower montane forest; widespread.

176.10.6 **Melicope lunu-ankenda** (Gaertn.) T.G. Hartley, **H23** 61, **S66** 131; *Euodia malayana* Ridl., **FMP1** 342; *Euodia roxburghiana* (Cham.) Benth., **TFM1** 379; tree to 20 m tall; lowland forest; throughout.

176.10.7 **Melicope macrocarpa** (King) T.G. Hartley, **S66** 133; *Euodia macrocarpa* King, **FMP1** 344, **TFM1** 378; *Euodia euneura auct. non* (Miq.) Miq., **TFM1** 377; tree to 20 m tall; mostly in the lowlands; Pn, Pk, Ph, Sl.

176.10.8 **Melicope pachyphylla** (Blume) T.G. Hartley, **S66** 134; *Euodia pachyphylla* King, **FMP1** 344, **TFM1** 376; shrub to 4 m tall; upper montane forest; Pk, Ph; endemic.

176.10.9 **Melicope pahangensis** T.G. Hartley, **S66** 135; *Euodia simplicifolia* Ridl., **FMP1** 345, **TFM1** 376; shrub to 2 m tall; upper montane forest; summit of Gg Tahan and Gg Brinchang, Ph; endemic.

176.10.10 **Melicope suberosa** B.C. Stone, **S57** 94, **S66** 129; small tree to 10 m tall; upper montane forest at 1550 m; only known from the summit of Gg Ulu Kali, Ph; endemic.

176.11.1 **Merope angulata** (Willd.) Swingle, **TFM1** 382; *Merope longispina* Hook.*f*., **FMP1** 356; spiny shrub or small tree; mangrove swamps; Pk, NS, Ml, Sp.

176.12.1 **Merrillia caloxylon** (Ridl.) Swingle, **FMP1** 354, **TFM1** 383; small tree; lowland forest, often on riverbanks; Kd, Pk, Ph, Sl.

176.13.1 **Micromelum hirsutum** Oliv., **FMP1** 352, **TFM1** 383; shrub to 2 m tall; open country; Ml and Ph northward.

176.13.2 **Micromelum minutum** (G. Forst.) Wight & Arn., **TFM1** 383; *Micromelum pubescens* Blume, **FMP1** 352; shrub or small tree; hills, sometimes on limestone; P. Langkawi, Kd, Pk, Ph, Sl.

176.14.1 **Murraya paniculata** (L.) Jack, **TFM1** 384, **C15** 152; *Murraya exotica* L., **FMP1** 353; shrub or small tree to 5 m tall; wild on limestone hills, also widely cultivated; Kl, Pk.

176.15.1 **Paramignya cuspidata** (Ridl.) Swingle, **TFM1** 384; *Atalantia cuspidata* Ridl., **FMP1** 357; prickly shrub; lowland and hill forest; Pk, Ml; endemic.

176.15.2 **Paramignya lobata** Burkill, **TFM1** 384; *Atalantia hispida auct. non* Guillaumin, **FMP1** 357; scandent shrub; lowlands; widespread; endemic.

176.15.3 **Paramignya scandens** (Griff.) Craib var. **ridleyi** (Burkill) Swingle, **TFM1** 384; *Paramignya griffithii* Hook.*f*., **FMP1** 356; woody climber; lowlands: Ml, Sp; endemic variety.

176.16.1 **Tetractomia majus** Hook.*f*., **FMP1** 346, **TFM1** 385, **H20** 145; tree to 15 m tall; lowland peat swamp forest; Ml, Jh; endemic.

176.16.2 **Tetractomia tetrandum** (Roxb.) Merr., **TFM1** 385, **H20** 132; *Tetractomia roxburghii* Hook.*f*., *nom. illeg*., **FMP1** 346; *Terminthodia viridiflora* Ridl., **FMP1** 345, **TFM1** 385; *Tetractomia holttumi* Ridl., **FMP5** 295; shrub or tree to 35 m tall; lowlands and mountains; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Jh, ?Sp.

176.17.1 **Tetradium glabrifolium** (Champ. *ex* Benth.) T.G. Hartley, **H21** 109, **S66** 139; *Euodia meliifolia* (Hance *ex* Walp.) Benth., **TFM1** 379; tree to 20 m tall; lowland forest; Bt Enggang F.R. and Gg Jerai, Kd.

176.17.2 **Tetradium sambucinum** (Blume) T.G. Hartley, **H21** 100, **S66** 139; tree; montane forest; once from Gg Mandi Angin, Tg.

176.18.1 **Zanthoxylum acanthopodium** DC., **H18** 209, **S41** 31, **TFM1** 386; prickly scandent shrub; montane forest margins; Cameron Highlands, Ph.

176.18.2 **Zanthoxylum myriacanthum** Wall. *ex* Hook.*f*., **FMP1** 347, **H18** 185, **TFM1** 386; prickly-trunked tree to 25 m tall; hill forest to 1000 m; Pn, Pk, Ph, Sl, NS, Ml.

176.18.3 **Zanthoxylum nitidum** (Roxb.) DC., **H18** 180, **TFM1** 386; *Zanthoxylum hirtellum* Ridl., **FMP1** 347; prickly climbing shrub; Pk, Ph, Sl, NS, Sp.

176.18.4 **Zanthoxylum rhetsa** (Roxb.) DC., **TFM2** 386; *Zanthoxylum limonella* (Dennst.) Alston, **H18** 197; prickly tree to 35 m tall; lowland forest; Kl.

177. SABIACEAE

177.1.1 **Sabia erratica** van de Water, **FMi10** 684; ?liana; lowland forest; only known from type; Bt Timah, Sp (dubiously localized); endemic.

177.1.2 **Sabia limoniacea** Wall. *ex* Hook.*f*., **FMP1** 513, **FMi10** 685; liana to 10 m long; hill forest; Pn, Pk.

177.1.3 **Sabia sumatrana** Blume, **FMP1** 513, **FMi10** 689; liana; lowland and hill forest; Pk.

178. SALICACEAE

178.1.1 **Salix tetrasperma** Roxb., **FMP1** 393, **TFM4** 433; narrow-leaved tree to 25 m tall; along rivers (male trees only); dubiously native in Pk, Ph, Sl.

179. SANTALACEAE

179.1 **Dendromyza reinwardtiana** (Blume) Danser, **S36** 59, **TFM2** 342; *Henslowia reinwardtiana* Blume, **FMP3** 169; twining hemiparasite; lowland forest; once from Pk.

179.2.1a **Dendrotrophe buxifolia** (Blume) Miq. var. **buxifolia**, **S36** 54, **TFM2** 342; *Henslowia buxifolia* Blume, **FMP3** 170; yellowish hemiparasitic shrubby twiner; dry open forest often near the sea; P. Langkawi, Pn, Jh, Sp.

179.2.1b **Dendrotrophe buxifolia** (Blume) Miq. var. **minor** (Ridl.) Stauffer, **S36** 58; *Henslowia minor* Ridl., **FMP3** 167; slender twining hemiparasite; Kd, Tg, Ph.

179.2.1c **Dendrotrophe buxifolia** (Blume) Miq. var. **multinervis** Stauffer, **S36** 59; twining hemiparasite; montane forest; Tg, Pk, Ph, Sl, Ml.

179.2.2 **Dendrotrophe umbellata** (Blume) Miq., **TFM2** 342; *Henslowia umbellata* Blume, **FMP3** 167; *Henslowia monticola* Gamble, **FMP3** 169; twining hemiparasite; forest; widespread.

179.2.3 **Dendrotrophe varians** (Blume) Miq., **TFM2** 342; *Henslowia ridleyi* Gamble, **FMP3** 167; *Henslowia philippinensis* A. DC., **FMP3** 168; *Henslowia wrayi* Gamble, **FMP3** 168; *Henslowia lobbiana* A. DC., **FMP3** 169; *Henslowia varians* Blume, **FMP3** 170; hemiparasitic twiner; widespread.

179.3.1 **Dufreynoya euryphylla** (Danser) Stauffer, **S36** 67; hemiparasitic shrub; once from Ph.

179.3.2 **Dufreynoya oresitropha** (Danser) Stauffer, **S36** 66; hemiparasitic shrub; Ph.

179.3.3 **Dufreynoya papillosa** Stauffer, **S36** 66; hemiparasitic shrub; montane forest at 1200 m; Cameron Highlands, Ph; endemic.

179.4.1 **Phacellaria malayana** Ridl., **FMP3** 170; small leafless hyperparasitic epiphytic shrub; on mistletoes in montane forest; Ph, Sl.

179.5.1 **Scleropyrum pentandrum** (Dennst.) Mabb., **M02** 533; *Scleropyrum maingayi* Hook.*f*., **FMP3** 171; *Scleropyrum ridleyi* Gamble, **FMP3** 171; *Scleropyrum wallichianum* (Wight & Arn.) Arn., **TFM2** 343; spiny tree to 21 m tall; lowland forest; scattered throughout.

180. SAPINDACEAE

180.1.1 **Allophylus cobbe** (L.) Raeusch., **TFM4** 436 incl. vars. *glaber* Corner, *limosus* Corner, *marinus* Corner, *velutinus* Corner and *villosus* Corner, **FMi11** 459; *Allophylus fulvinervis* (Blume) Blume, **FMP1** 489; *Allophylus glaber* Roxb., *nom. illeg.*, **FMP1** 489; *Allophylus ternatus* Lour., **FMP1** 489; *Allophylus villosus* (Roxb.) Blume, **FMP1** 490; *Allophylus scandens* Ridl., **FMP1** 490; shrub or small tree to 15 m tall; lowland forests, often coastal; throughout.

180.2.1 **Amesiodendron chinense** (Merr.) Hu, **TFM4** 437, **FMi11** 467; tree to 30 m tall; hill forest at 300–400 m; Kd, Pk, Ph, Sl, NS.

180.3.1 **Arytera littoralis** Blume, **FMP1** 507, **TFM4** 438, **FMi11** 473; tree to 30 m tall; lowland forest; Kd, Pk, Ph, Sl, Ml.

180.4.1 **Cardiospermum halicacabum** L., **FMP1** 488, **TFM4** 434, **FMi11** 484; trailing or climbing vine; cultivated ground, waste places near the sea; widespread.

180.5.1 **Dimocarpus fumatus** (Blume) Leenh., **TFM4** 439, **FMi11** 515; tree to 20 m tall; lowland forest; once each from Baling, Kd, and Ulu Trengganu, Tg.

180.5.2a **Dimocarpus longan** Lour. ssp. **longan**, **TFM4** 439, **FMi11** 518; *Nephelium longana* Camb., **FMP1** 499; tree; lowland forest (longan of cultivation); twice from Pk.

180.5.2b **Dimocarpus longan** Lour. ssp. **malesianus** Leenh., **TFM4** 439, **FMi11** 519; *Nephelium malaiense* Griff., **FMP1** 503; *Nephelium echinulatum* (Radlk.) Ridl., **FMP1** 503; tree to 20 m tall; lowland forest (mata kuching of cultivation); Tg, Pk, Jh.

180.6.1 **Dodonaea viscosa** Jacq., **FMP1** 510, **TFM4** 440, **FMi11** 526; shrub or small tree to 6 m tall; sandy shores; mostly East Coast.

180.7.1 **Ganophyllum falcatum** Blume, **TFM4** 440, **FMi11** 538; tree to 24 m tall; coastal forest; once from Tg Penawar, Jh.

180.8.1 **Glenniea penangensis** (Ridl.) Leenh., **TFM4** 440, **FMi11** 542; *Tristira penangensis* Ridl., **FMP1** 496; tree to 30 m tall; lowland and hill forest to 1000 m; widespread; endemic.

180.9.1 **Guioa bijuga** (Hiern) Radlk., **TFM4** 441, **FMi11** 567; *Guioa pleuropteris* (Blume) Radlk. var. *bijuga* (Hiern) Ridl., **FMP1** 505; tree to 10 m tall; lowland forest; common throughout.

180.9.2 **Guioa diplopetala** (Hassk.) Radlk., **FMi11** 570; *Guioa fuscidula* (Kurz) Radlk., **FMP1** 506, **TFM4** 442; *Guioa squamosa* Radlk., **FMP1** 506, **TFM4** 442; *Guioa microphylla* Radlk., **FMP1** 506; *Guioa sp. 1*, **TFM4** 443; *Guioa sp. 2*, **TFM4** 443; ?*Guioa sp. 3*, **TFM4** 443; tree to 18 m tall; lowland and hill forest; northern half of the Peninsula.

180.9.3 **Guioa pleuropteris** (Blume) Radlk., **FMP1** 505, **TFM4** 442, **FMi11** 584; tree to 10 m tall; coastal and riverine forest; widespread.

180.9.4 **Guioa pubescens** (Zoll. & Moritzi) Radlk., **FMP1** 506, **TFM4** 442, **FMi11** 591; tree to 15 m tall; secondary forest; NS southward.

180.10.1 **Harpullia arborea** (Blanco) Radlk., **TFM4** 444, **FMi11** 601; tree to 20 m tall; lowland forest; Pk, Ph.

180.10.2 **Harpullia cupanioides** Roxb., **TFM4** 444, **FMi11** 606; *Harpullia confusa* Blume, **FMP1** 510; *Walsura villosa auct. non* Wall., **FMP1** 412; tree to 16 m tall; lowland forest; Kl, Pk, Ph, Sl, NS.

180.11.1 **Lepisanthes alata** (Blume) Leenh., **TFM4** 445, **FMi11** 646; small tree; once from Jh (possibly merely in cultivation).

180.11.2 **Lepisanthes amoena** (Hassk.) Leenh., **TFM4** 445, **FMi11** 636; *Otophora imbricata* Blume, **FMP1** 495; shrub to 3 m tall; Ph, Sl.

180.11.3 **Lepisanthes ferruginea** (Radlk.) Leenh., **TFM4** 445, **FMi11** 634; tree to 15 m tall; hill forest; Gg Bubu, Pk; P. Tioman.

180.11.4 **Lepisanthes fruticosa** (Roxb.) Leenh., **TFM4** 446, **FMi11** 643; *Otophora resecta* Radlk., **FMP1** 495; *Otophora sessilis* King, **FMP1** 495; *Otophora erythrocalyx* Hiern, **FMP1** 496; tree to 6 m tall; lowland forest, usually on slopes; Kd, Pn, Kl, Pk, Ph, Sl, Ml.

180.11.5 **Lepisanthes rubiginosa** (Roxb.) Leenh., **TFM4** 446, **FMi11** 648; *Erioglossum edule* (Blume) Blume, **FMP1** 492; *Lepisanthes hirta* Ridl., **FMP1** 494; tree to 10 m tall; coastal forest, widely cultivated; widespread.

180.11.6 **Lepisanthes senegalensis** (Poir.) Leenh., **TFM4** 446, **FMi11** 651; *Aphania paucijuga* (Hiern) Radlk., **FMP1** 492; tree to 20 m tall; lowland and hill forest to 1000 m; widespread.

180.11.7 **Lepisanthes tetraphylla** (Vahl) Radlk., **TFM4** 447, **FMP5** 301, **FMi11** 630; *Lepisanthes cuneata* Hiern, **FMP1** 493; *Lepisanthes kunstleri* King, *nom. illeg.*, **FMP1** 493; *Lepisanthes scortechinii* King, **FMP1** 493 incl. var. *hirta* Radlk.; *Lepisanthes longifolia* (Hiern) Radlk., **FMP1** 494; shrub or small tree to 8 m tall; lowland forest; widespread.

180.12.1 **Litchi chinensis** Sonn., **TFM4** 447, **FMi11** 654; tree to 30 m tall; hill forest; Kd, Tg, Pk, Sl, NS.

180.13.1 **Mischocarpus pentapetalus** (Roxb.) Radlk., **TFM4** 449, **FMi11** 662; *Mischocarpus sumatranus* Blume, **FMP1** 508; tree to 20 m tall; lowland and hill forest to 1500 m; scattered.

180.13.2 **Mischocarpus sundaicus** Blume, **TFM4** 449, **FMi11** 667; *Mischocarpus lessertianus* Ridl., **FMP1** 508; tree to 6 m tall; sandy or swampy coastal forest; widespread.

180.14.1 **Nephelium costatum** Hiern, **FMP1** 501, **TFM4** 451, **FMi11** 673; tree to 18 m tall; lowland forest; Pk, Ph, Sl, NS, Ml; endemic.

180.14.2a **Nephelium cuspidatum** Blume var. **cuspidatum**, **TFM4** 451, **FMi11** 676; tree to 20 m tall; lowland forest; Tg, Sl, NS, Jh.

180.14.2b **Nephelium cuspidatum** Blume var. **eriopetalum** (Miq.) Leenh., **TFM4** 451, **FMi11** 676; *Nephelium eriopetalum* Miq., **FMP1** 502; tree to 22 m tall; lowland forest; Kl, Ph, Sl, NS, Jh.

180.14.2c **Nephelium cuspidatum** Blume var. **ophioides** (Radlk.) Leenh., **TFM4** 451, **FMi11** 677; *Nephelium ophioides* Radlk., **FMP1** 502; tree to 23 m tall; lowland and hill forest; Ph, NS, Jh.

180.14.3 **Nephelium hamulatum** Radlk., **FMP1** 501, **TFM4** 452, **FMi11** 678; *Nephelium herveyi* Ridl., **FMP1** 500 in part; tree to 27 m tall; lowland forest; Kd, Pk, Ph, Sl, NS, Ml, Jh; endemic.

180.14.4 **Nephelium juglandifolium** Blume, **TFM4** 452, **FMi11** 679; *Nephelium tuberculatum* Radlk., **TFM4** 452; tree to 30 m tall; lowland forest; scattered.

180.14.5a **Nephelium lappaceum** L. var. **lappaceum**, **FMP1** 499, **TFM4** 453, **FMi11** 682; *Nephelium glabrum* Noronha var. *sufferugineum* (Radlk.) Ridl., **FMP1** 499; tree to 30 m tall; lowland and hill forest to 600 m (ubiquitously cultivated); scattered in the wild.

180.14.5b **Nephelium lappaceum** L. var. **pallens** (Hiern) Leenh., **TFM4** 453, **FMi11** 683; tree to 25 m tall; swampy lowland forest to 400 m; scattered widely.

180.14.6 **Nephelium laurinum** Blume, **TFM4** 453, **FMi11** 684; *Nephelium herveyi* Ridl., **FMP1** 500 in part, not including type; *Nephelium caudifolium* Ridl., **FMP1** 500; *Nephelium rubescens* Hiern, **FMP1** 500; tree to 20 m tall; wet lowland forest, often near streams; widespread.

180.14.7 **Nephelium maingayi** Hiern, **TFM4** 454, **FMi11** 685; *Nephelium glabrum auct. non* Noronha, **FMP1** 499; tree to 35 m tall; swampy lowland forest; Kl and Pk to Jh.

180.14.8 **Nephelium melliferum** Gagnep., **TFM4** 454, **FMi11** 688; tree to 30 m tall; sandstone ridge (350 m); Gg Kerbat, Tg, and one other collection.

180.14.9 **Nephelium ramboutan-ake** (Labill.) Leenh., **TFM4** 454, **FMi11** 679; *Nephelium mutabile* Blume, **FMP1** 501; tree to 35 m tall; lowland forest, riverbanks; Pn, Kl, Tg, Pk, Ph, Sl, Ml, Sp.

180.14.10 **Nephelium subfalcatum** Radlk., **TFM4** 455, **FMi11** 692; tree to 38 m tall; lowland forest, hillslopes; Pk, Ph, Jh.

180.14.11 **Nephelium uncinatum** Radlk. *ex* Leenh., **TFM4** 455, **FMi11** 692; tree to 20 m tall; lowland forest; Ulu Gombak, Sl.

180.14.12 **Nephelium sp. 1**, **TFM4** 455, **FMi11** 693; tree to 45 m tall; hill forest; Tapah Hills, Pk; endemic.

180.15.1 **Paranephelium macrophyllum** King, **FMP1** 509, **TFM4** 456, **FMi11** 696; tree to 10 m tall; lowland forest; Ps, Kd, Pk, Sp.

180.15.2 **Paranephelium spirei** Lecomte, **TFM4** 456, **FMi11** 696; tree to 15 m tall; lowland forest; Ps, Pk, Ph.

180.15.3 **Paranephelium xestophyllum** Miq., **TFM4** 457, **FMi11** 696; *Paranephelium nitidum* King, **FMP1** 509; tree to 35 m tall; lowland forest, sometimes on limestone; Kl, Pk, Ph, Sl, NS.

180.16.1 **Pometia pinnata** J.R. Forst. & G. Forst., **FMP1** 504, **TFM4** 457, **FMi11** 701; *Pometia macrocarpa* Kurz, **FMP1** 503; *Pometia alnifolia* (Blume) King, **FMP1** 504; tree to 40 m tall; damp forest in the lowlands and hills; throughout.

180.16.2 **Pometia ridleyi** King *ex* Radlk., **TFM4** 458, **FMi11** 703; tree to 50 m tall; lowland and hill forest to 750 m; Pk, Ph, Sl, NS.

180.17.1 **Trigonachras acuta** (Hiern) Radlk., **FMP1** 507, **TFM4** 459, **FMi11** 735; tree to 18 m tall; swampy lowland forest, often near the sea; Kl, Ph, Sl, Ml, Jh.

180.17.2 **Trigonachras sp. 1**, **TFM4** 459; tree; lowland forest; once from Jenangau F.R., Tg; endemic.

180.18.1 **Xerospermum laevigatum** Radlk., **FMP1** 497, **TFM4** 461, **FMi11** 748; *Xerospermum unijugum* Radlk., **FMP1** 497; tree to 30 m tall; lowland and hill forest to 700 m; throughout.

180.18.2 **Xerospermum noronhianum** (Blume) Blume, **TFM4** 461, **FMi11** 750; *Xerospermum echinulatum* Radlk., **FMP1** 497; *Xerospermum intermedium* Radlk., **FMP1** 497; *Xerospermum wallichii* King, **FMP1** 498; tree to 25 m tall; lowland forest to 500 m; widespread.

181. SAPOTACEAE

181.1.1 **Chrysopyllum roxburghii** G. Don, **FMP2** 257; *Chrysophyllum lanceolatum* [*non* Casar.] (Blume) A. DC., **TFM1** 396, **P15** 221; tree to 30 m tall; lowland forest; Kd, Ph, Sl, NS, Ml, Jh, Sp.

181.2.1 **Diploknema sebifera** Pierre, **TFM1** 396, **P15** 164; big tree to 40 m tall; lowland forest; Kl, Pk.

181.3.1a **Isonandra perakensis** King & Gamble var. **kelantanensis** Ng, **FMP1** 400; tree to 10 m tall; summits of limestone hills; Kl, Ph; endemic.

181.3.1b **Isonandra perakensis** King & Gamble var. **perakensis**, **FMP1** 261, **TFM1** 400, **P15** 154; small tree to 10 m tall; summits of limestone hills; three limestone outcrops in the Kinta Valley, Pk; endemic.

181.4.1 **Madhuca aristulata** (King & Gamble) H.J. Lam, **TFM1** 404, **P15** 156; *Bassia aristulata* King & Gamble, **FMP2** 266; tree to 10 m tall; once each from Gg Bintang, Kd and Gopeng, Pk; endemic.

181.4.2 **Madhuca calcicola** P. Royen, **TFM1** 405; small tree; on limestone; P. Langkawi; endemic.

181.4.3 **Madhuca cuprea** (King & Gamble) H.J. Lam, **TFM1** 405; *Bassia cuprea* King & Gamble, **FMP2** 270; tree to 20 m tall; once collected but type lost, Pk; endemic but doubtful species.

181.4.4 **Madhuca curtisii** (King & Gamble) Ridl., **FMP5** 319, **P15** 157; *Bassia curtisii* King & Gamble, **FMP2** 268; *Bassia perakensis* (King & Gamble) H.J. Lam, **FMP2** 269; *Madhuca chrysocarpa* (Pierre *ex* Dubard) Ridl., **FMP5** 342; *Ganua curtisii* (King & Gamble) H.J. Lam, **TFM1** 397; tree to 25 m tall; hill forest; Pn, Tg, Pk, Ph.

181.4.5 **Madhuca decipiens** J. Sinclair, **TFM1** 405, **P15** 157; *Payena grandiflora* Ridl., **FMP2** 262 in part; tree to 20 m tall; lowland forest; Jh, Sp.

181.4.6 **Madhuca erythrophylla** (King & Gamble) H.J. Lam, **TFM1** 405, **P15** 157; *Bassia erythrophylla* King & Gamble, **FMP2** 272; tree to 35 m tall; lowland forest; Pn, Ph, Jh (once each).

181.4.7 **Madhuca hirtiflora** (Ridl.) H.J. Lam. **FMP5** 319; *Bassia hirtiflora* Ridl., **FMP2** 266; *Ganua hirtiflora* (Ridl.) P. Royen, **TFM1** 398; tree to 12 m tall; lowland forest; Pk, Jh.

181.4.8 **Madhuca kingiana** (Brace *ex* King & Gamble) H.J. Lam, **FMP5** 319, **P15** 157; *Bassia kingiana* Brace *ex* King & Gamble, **FMP2** 267; *Ganua kingiana* (Brace *ex* King & Gamble) Van den Assem, **TFM1** 399; tree to 27 m tall; lowland and hill forest; Tg, Pk, Ph, Sl, Jh, Sp.

181.4.9 **Madhuca korthalsii** (Pierre *ex* Burck) H.J. Lam, **TFM1** 406, **P15** 157; *Bassia braceana* King & Gamble, **FMP2** 270; tree to 20 m tall; lowland forest; ?Kl, Pk, Ph, Sl.

181.4.10 **Madhuca kunstleri** (Brace *ex* King & Gamble) H.J. Lam, **TFM1** 406, **P15** 157; *Bassia kunstleri* Brace *ex* King & Gamble, **FMP2** 267; tree to 18 m tall; lowland and hill forest; Kd, Pk.

181.4.11 **Madhuca laurifolia** (King & Gamble) H.J. Lam, **TFM1** 406, **P15** 157; *Bassia laurifolia* King & Gamble, **FMP1** 269 incl. vars. *typica* Ridl. and *obtusa* Ridl.; *Bassia rupicola* (King & Gamble) H.J. Lam, **FMP2** 269; tree to 30 m tall; lowland and hill forest; Kd, Pn, Tg, Pk, Ph, NS, Jh.

181.4.12 **Madhuca longistyla** (King & Gamble) H.J. Lam, **TFM1** 407; *Bassia longistyla* King & Gamble, **FMP2** 270; tree to 30 m tall; lowlands and freshwater swamps; Pk; endemic.

181.4.13 **Madhuca malaccensis** (C.B. Clarke) H.J. Lam, **TFM1** 407, **P15** 158; *Bassia malaccensis* (C.B. Clarke) King & Gamble, **FMP2** 268; *Bassia elongata auct. non* Miq., **FMP2** 272; tree to 20 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

181.4.14 **Madhuca motleyana** (de Vriese) J.F. Macbr., **P15** 158; *Bassia motleyana* (de Vriese) C.B. Clarke, **FMP2** 271; *Ganua motleyana* (de Vriese) Pierre *ex* Dubard, **TFM1** 399; tree to 35 m tall; lowland forest and swamps; widespread.

181.4.15 **Madhuca obtusifolia** (King & Gamble) P. Royen, **TFM1** 408; *Payena obtusifolia* King & Gamble, **FMP2** 264; tree; only known from type, Pk; endemic.

181.4.16 **Madhuca penangiana** (King & Gamble) H.J. Lam, **TFM1** 408; *Bassia laurifolia* King & Gamble var. *parvifolia* King & Gamble, **FMP2** 269; *Bassia penangiana* King & Gamble, **FMP2** 269; tree to 25 m tall; hill and montane forest; Kd, Pn, Pk; endemic.

181.4.17 **Madhuca penicillata** (King & Gamble) H.J. Lam, **TFM1** 408; *Bassia penicillata* King & Gamble, **FMP2** 268; tree to 30 m tall; lowland forest; Kl, Tg, Pk, Sl, NS; endemic.

181.4.18 **Madhuca ridleyi** H.J. Lam, **TFM1** 409; tree to 15 m tall; usually on limestone hills; Ps, Kd, Kl, Pk, Ph; endemic.

181.4.19 **Madhuca rufa** (King & Gamble) P. Royen, **TFM1** 409; *Isonandra rufa* King & Gamble, **FMP2** 261; tree to 10 m tall; lowland forest; thrice from Pk; endemic.

181.4.20 **Madhuca selangorica** (King & Gamble) J. Sinclair, **TFM1** 410, **P15** 158; *Payena selangorica* King & Gamble, **FMP2** 264; tree to 15 m tall; lowland forest; Ph, Sl, NS; endemic.

181.4.21a **Madhuca sericea** (Miq.) H.J. Lam var. **ridleyi** (Gand.) Ng, **TFM1** 410; tree to 30 m tall; lowland forest; Tg, Jh, Sp.

181.4.21b **Madhuca sericea** (Miq.) H.J. Lam var. **sericea**, **TFM1** 410, **P15** 159; *Bassia argentea auct. non* de Vriese, **FMP2** 270; tree to 30 m tall; lowland forest; Pk, Ph, NS, Sp.

181.4.22 **Madhuca sessiliflora** P. Royen, **TFM1** 410; tree to 5 m tall; swampy lowland forest; Jh; endemic.

181.4.23 **Madhuca sessilis** (King & Gamble) Baehni, **B05** 36; *Ganua sessilis* (King & Gamble) H.J. Lam, **TFM1** 399; *Payena sessilis* King & Gamble, **FMP2** 265; tree: once from Singapore.

181.4.24 **Madhuca tomentosa** H.J. Lam, **FMP5** 342, **TFM1** 411; tree to 10 m tall; swampy lowland forest; Ph, Jh; endemic.

181.4.25 **Madhuca tubulosa** H.J. Lam, **TFM1** 411, **P15** 159; tree to 20 m tall; lowland forest; Tg, Jh; endemic.

181.4.26 **Madhuca utilis** (Ridl.) H.J. Lam, **TFM1** 411, **P15** 159; *Payena utilis* Ridl., **FMP2** 265; *Madhuca stenophylla* H.J. Lam, **FMP5** 342; tree to 40 m tall; lowland forest; Tg, Pk, Ph, Sl, Jh.

181.4.27 **Madhuca sp. A**, **TFM1** 412; tree to 30 m tall; lowland forest; Jh; ?endemic.

181.4.28 **Madhuca sp. B**, **TFM1** 412; tree to 30 m tall; lowland forest; Jh; ?endemic.

181.4.29 **Madhuca sp. C**, **TFM1** 412; tree to 15 m tall; lowland forest; once from Labis F.R., Jh; ?endemic.

181.5.1 **Manilkara kauki** (L.) Dubard, **TFM1** 414, **P15** 133; *Mimusops kauki* L., **FMP2** 278; tree to 23 m tall; rocky shores; Ph, Jh.

181.6.1 **Mimusops elengi** L., **FMP2** 278, **TFM1** 414, **P15** 123; tree to 15 m tall; rocky headlands; Ps, P. Langkawi, Kd.

181.7.1 **Palaquium burckii** H.J. Lam, **TFM1** 419, **P15** 150; tree to 27 m tall; peat swamp forest; Pontian, Jh.

181.7.2 **Palaquium clarkeanum** King & Gamble, **FMP2** 274 in part, **TFM1** 419; tree to 45 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh.

181.7.3 **Palaquium confertum** H.J. Lam, **TFM1** 419; tree to 27 m tall; once from swamp forest in Jh.

181.7.4 **Palaquium gutta** (Hook.*f.*) Baill., **FMP2** 274, **TFM1** 420, **P15** 150; tree to 25 m tall; lowland and hill forest; Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

181.7.5 **Palaquium herveyi** King & Gamble, **FMP2** 276, **TFM1** 420; tree to 50 m tall; lowland forest; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml.

181.7.6 **Palaquium hexandrum** (Griff.) Baill., **FMP2** 277, **TFM1** 421, **P15** 151; tree to 50 m tall; mostly lowland forest, a few records from much higher; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

181.7.7 **Palaquium hispidum** H.J. Lam, **FMP2** 421; tree to 45 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Sp.

181.7.8 **Palaquium impressinervium** Ng, **TFM1** 422; tree to 45 m tall; lowland forest; Kd, Kl, Pk, Ph, NS.

181.7.9 **Palaquium leiocarpum** Boerl., **TFM2** 422, **P15** 151; tree to 35 m tall; lowland freshwater swamp forest; Kl, Tg.

181.7.10 **Palaquium macrocarpum** Burck, **TFM2** 422; tree to 25 m tall; lowland forest; Sl, Jh.

181.7.11 **Palaquium maingayi** (C.B. Clarke) King & Gamble, **FMP2** 273, **TFM1** 423, **P15** 151; tree to 30 m tall; lowland anmd hill forest; Kd, Kl, Pk, Ph, Sl, NS, Ml, Jh; endemic.

181.7.12 **Palaquium microphyllum** King & Gamble, **FMP2** 276, **TFM1** 423, **P15** 151; tree to 30 m tall; lowland forest; Kd, Pk, Ph, Sl, NS, Jh, Sp.

181.7.13 **Palaquium obovatum** (Griff.) Engl., **FMP2** 273, **TFM1** 423, **P15** 151; tree to 30 m tall; lowland forest; Kd, Pn, Kl, Tg, Ph, Sl, NS, Ml, Jh, Sp.

181.7.14 **Palaquium ottolanderi** Koord. & Valeton, **TFM1** 424, **P15** 151; tree to 45 m tall; lowland forest; Kd, Pk, Ph.

181.7.15 **Palaquium oxleyanum** Pierre, **FMP2** 275, **TFM1** 424; tree to 25 m tall; lowland and hill forest; Pk, Ph, Sl, Sp; endemic.

181.7.16 **Palaquium regina-montium** Ng, **TFM1** 425, **P15** 151; tree to 25 m tall; montane forest; Pk, Ph, Sl; endemic.

181.7.17 **Palaquium ridleyi** King & Gamble, **FMP2** 276, **TFM1** 426; tree to 40 m tall; lowland swamp forest; Pk, Ph, Sl, Jh, Sp.

181.7.18 **Palaquium rostratum** (Miq.) Burck, **TFM1** 426, **P15** 152; *Bassia cuneata auct. non* Blume, **FMP2** 272; *Palaquium bancanum* Burck, **FMP2** 275; *Palaquium calophylloides* Ridl., **FMP2** 276; tree to 50 m tall; lowland to montane forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

181.7.19 **Palaquium semaram** H.J. Lam, **TFM1** 427; tree to 45 m tall; lowland forest; Kl, Tg, Ph, Jh.

181.7.20 **Palaquium stellatum** King & Gamble, **FMP2** 277, **TFM1** 427, **P15** 152; tree to 50 m tall; lowland forest; Kd, Kl, Pk, Ph, Sl, NS, Ml, Jh.

181.7.21 **Palaquium sukoei** C.E.C. Fisch., **TFM1** 427; tree to 35 m tall; lowland and hill forest; Tg, Pk, Jh.

181.7.22 **Palaquium xanthochymum** (de Vriese) Pierre *ex* Burck, **FMP2** 275, **TFM1** 428; tree to 40 m tall; swampy lowland forest; Tg, Pk, Ph, Sl, Jh, Sp.

181.8.1 **Payena acuminata** (Blume) Pierre, **TFM1** 429, **P15** 160; tree to 15 m tall; lowland and hill forest; Tg, Ph.

181.8.2 **Payena dasyphylla** (Miq.) Pierre, **FMP2** 264, **TFM1** 430, **P15** 160; *Bassia caudata* Ridl., **FMP2** 267; tree to 27 m tall; lowland to montane forest; Kl, Pk, Ph, NS.

181.8.3 **Payena lanceolata** Ridl., **FMP2** 264, **TFM1** 430, **P15** 160; tree to 40 m tall; lowland and hill forest; Ps, Kd, Kl.

181.8.4 **Payena leerii** (Teijsm. & Binn.) Kurz, **FMP2** 263, **TFM1** 432; tree to 40 m tall; lowland forest; Pk, ?Sp.

181.8.5 **Payena longipedicellata** Brace *ex* King & Gamble, **FMP2** 262, **TFM1** 432; tree to 35 m tall; lowland forest; once from Pk (type).

181.8.6 **Payena lowiana** Pierre, **TFM1** 432; tree to 35 m tall; once from Bt Berapit, Pk.

181.8.7 **Payena lucida** (G. Don) A. DC., **FMP2** 263, **TFM1** 433, **P15** 160; *Payena dasyphylla* (Miq.) Pierre var. *glabrata* King & Gamble, **FMP2** 265; tree to 20 m tall; lowland to montane forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

181.8.8 **Payena maingayi** C.B. Clarke, **FMP2** 262, **TFM1** 433, **P15** 160; *Payena grandiflora* Ridl., **FMP2** 262 in part; tree to 45 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp; endemic.

181.8.9 **Payena obscura** Burck, **TFM1** 433; *Payena havilandii* King & Gamble, **FMP2** 263; tree to 35 m tall; lowland to lower montane forest; Kd, Pn, Pk, Ph, Sl, Jh, Sp.

181.8.10 **Payena sp. A**, **TFM1** 434; tree to 27 m tall; lowland forest; twice from Bt Bauk, Tg.

181.9.1 **Pouteria firma** (Miq.) Baehni, **P15** 198; *Sideroxylon firmum* (Miq.) Pierre *ex* Burck, **FMP2** 260; *Planchonella firma* (Miq.) Dubard, **TFM1** 435; tree to 25 m tall; montane forests, once on rocky coast; Kd, Pn, Ph, Jh.

181.9.2 **Pouteria glabra** (Ridl.) I.M. Turner, **T24** 223; *Planchonella glabra* (Ridl.) H.J. Lam, **TFM1** 435; *Sideroxylon glabrum* Ridl., **FMP2** 259; tree to 27 m tall; montane forest; known only from Fraser's Hill, Ph.

181.9.3 **Pouteria linggensis** (Burck) Baehni, **P15** 199; *Chrysophyllum curtisii* King & Gamble, **FMP2** 257; *Sideroxylon littorale* Ridl., **FMP2** 259; *Planchonella linggensis* (Burck) Pierre, **FMP2** 436; tree to 20 m tall; rocky coasts and hill forest; Pn, Ph, Jh, Sp.

181.9.4 **Pouteria maingayi** (C.B. Clarke) Baehni, **P15** 199; *Sideroxylon maingayi* C.B. Clarke, **FMP2** 258; *Planchonella maingayi* (C.B. Clarke) P. Royen, **TFM1** 436; tree to 35 m tall; lowland and hill forest; throughout.

181.9.5 **Pouteria malaccensis** (C.B. Clarke) Baehni, **TFM1** 438, **P15** 199; *Sideroxylon malaccense* C.B. Clarke, **FMP2** 258; tree to 35 m tall; lowland to lower montane forest; throughout.

181.9.6 **Pouteria obovata** (R.Br.) Baehni, **P15** 199; *Sideroxylon ferrugineum* Hook. & Arn., **FMP2** 259; *Planchonella obovata* (R.Br.) Pierre, **TFM2** 437; tree to 25 m tall; rocky and sandy shores, also on limestone; all coasts.

181.9.7 **Pouteria paucinervia** Erlee, **TFM1** 438; tree to 27 m tall; swampy lowland forest; Tg, Jh.

181.10.1 **Sarcosperma paniculatum** (King) Stapf & King, **FMP2** 260, **TFM1** 440, **P15** 180; tree to 35 m tall; lowland and hill forest; Pk, Ph, Sl, Ml, Jh, Sp.

181.10.2 **Sarcosperma uittienii** H.J. Lam, **TFM1** 441; tree to 15 m tall; hill forest; Ulu Gombak and Ulu Langat, Sl.

182. SCHISANDRACEAE

182.1.1 **Kadsura lanceolata** King, **FMP1** 21, **S28** 203; slender liana; hill forest; Taiping Hills, Pk; Fraser's Hill, Ph.

182.1.2 **Kadsura scandens** Blume, **FMP1** 20, **S28** 199; *Kadsura cauliflora* Blume, **FMP1** 20; slender liana; lowland forest; widespread.

183. SCROPHULARIACEAE

183.1.1 **Adnosma caerulea** R.Br., **FMP2** 474, **Y05** 26, **Y06** 147; aromatic herb to 60 cm tall; grassy places; widespread.

183.1.2 **Adenosma hirsuta** (Miq.) Kurz, **FMP2** 475, **Y06** 148 '*hirsutum*'; robust herb to 1 m tall; sandy places; P. Langkawi, Pn.

183.1.3 **Adenosma indiana** (Lour.) Merr., **Y05** 29, **Y06** 150 '*indianum*'; *Adenosma capitata* (Benth.) Benth. *ex* Hance, **FMP2** 474; herb to 60 cm tall; sandy waste ground; widespread.

183.1.4 **Adenosma inopinata** Prain, **FMP2** 474; herb to 60 cm tall; damp grassy places; mostly in the south.

183.1.5 **Adenosma javanica** (Blume) Koord., **Y05** 35, **Y06** 152; *Adenosma ovata* (Benth.) Benth., **FMP2** 474 '*ovatum*'; low creeping herb; on shaded banks; widespread.

183.2.1 **Aeginetia pedunculata** Wall., **FMP2** 488; parasitic herb to 15 cm tall; hill forest; Pk.

183.3.1 **Artanema longifolium** (L.) Vatke, **Y05** 76, **Y06** 176, **M47** 514; *Artanema angustifolium* Benth., **FMP2** 484; herb to 1 m tall; marshy places; Ps, Pn, Kl, Pk, Ph, Sl, Jh, ?Sp.

183.4.1 **Bacopa floribunda** (R.Br.) Wettst., **Y05** 24, **Y06** 146; *Herpestis floribunda* R.Br., **H31** 57; herb to 50 cm tall; waste ground.

183.4.2 **Bacopa monnieri** (L.) Wettst., **Y05** 21, **Y06** 145; *Herpestis monnieri* (L.) Kunth, **FMP2** 475; prostrate succulent herb to 15 cm tall; damp places; widespread.

183.5.1 **Centranthera hispida** R. Br., **C15** 157; herb; once from Selat Panchur, P. Langkawi.

183.5.2 **Centranthera tranquebarica** (Spreng.) Merr., **Y05** 177, **Y06** 226; *Centranthera humifusa* Wall. *ex* Benth., **FMP2** 487; herb to 15 cm tall; short grass; P. Langkawi, Ml, Sp.

183.6.1 **Christisonia scortechinii** Prain, **FMP2** 489; fleshy white parasitic herb; hill forest; Pk, Sl.

183.7.1 **Cyrtandromoea grandis** Ridl., **FMP2** 543, **B43** 85, **Y06** 154; shrub to 2 m tall; lowland and hill forest; Kl, Tg, Pk, Sl, NS, Jh.

183.7.2 **Cyrtandromoea megaphylla** Hemsl., **FMP2** 543, **B43** 84; spreading shrub to 3 m tall; hill forest; Pk, Ph; endemic.

183.7.3 **Cyrtandromoea subsessilis** (Miq.) B.L. Burtt, **B43** 86, **Y06** 155; *Cyrtandromoea acuminata* C.B. Clarke, **FMP2** 542; shrub to 1 m tall; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS.

183.8.1a **Limnophila chinensis** (Osbeck) Merr. ssp. **aromatica** (Lam.) T. Yamazaki, **Y04** 600; *Limnophila gratissima* Blume, **FMP2** 478; *Limnophila aromatica* (Lam.) Merr., **P18** 145; herb to 50 cm tall; pools in lowland forest; Pk, Ml, Sp.

183.8.1b **Limnophila chinensis** (Osb.) Merr. ssp. **chinensis**, **P18** 151, **Y04** 598; *Limnophila hirsuta* (Heyne *ex* Benth.) Benth., **FMP2** 477; herb to 40 cm tall; damp places; Pk, Ml (once each).

183.8.2 **Limnophila erecta** Benth., **FMP2** 477, **P18** 157, **Y04** 593, **M47** 526; herb to 30 cm tall; streams and pools; Kl, Tg, Pk, Sl, Ml, Jh.

183.8.3 **Limnophila glabra** (Benj.) Kerr, **P18** 121, **Y04** 582, **Y06** 163; *Limnophila griffithii* Hook.*f*., **FMP2** 479; small tufted aquatic herb to 10 cm long; muddy pools; Ml.

183.8.4 **Limnophila heterophylla** (Roxb.) Benth., **FMP2** 479, **P18** 124, **Y04** 580, **Y06** 162; slender aquatic herb to 50 cm long; pools, rice-fields; Ps, P. Langkawi, Ml.

183.8.5 **Limnophila hippuridoides** Philcox, **P18** 150; aquatic herb to 60 cm long; pools; Pk, Ml; endemic.

183.8.6 **Limnophila indica** (L.) Druce, **P18** 115, **Y04** 581, **Y06** 163; amphibious herb to 15 cm tall; ditches; once from Kd.

183.8.7 **Limnophila laxa** Benth., **FMP2** 478, **P18** 161, **Y04** 589, **Y06** 168; slender flaccid herb to 25 cm tall; damp open places; Ps, P. Langkawi, Pn, Tg, Pk, NS, Ml, Sp.

183.8.8 **Limnophila micrantha** (Benth.) Benth., **FMP2** 476, **P18** 144, **Y04** 585, **Y06** 166; slender herb to 10 cm tall; rice-fields; Kd, Ph.

183.8.9 **Limnophila repens** (Benth.) Benth., **P18** 154, **Y04** 589, **Y06** 169; herb to 40 cm tall; Pn.

183.8.10 **Limnophila rugosa** (Roth) Merr., **P18** 135, **Y04** 584; *Limnophila roxburghii auct. non* G. Don, **FMP2** 476; stout herb to 60 cm tall; muddy places; P. Langkawi, Pk.

183.8.11 **Limnophila sessiliflora** (Vahl) Blume, **FMP2** 478, **P18** 112, **Y04** 579; aquatic herb to 40 cm tall; rice-fields, ditches, pools; P. Langkawi, Sp.

183.8.12 **Limnophila villifera** Miq., **FMP2** 477, **P18** 140; herb to 70 cm tall; once from Pk.

183.8.13 **Limnophila villosa** Blume, **FMP2** 477, **P18** 141, **M47** 528; aromatic herb to 40 cm tall; ditches and damp spots; common and widespread.

183.9.1 **Lindernia anagallis** (Burm.*f*.) Pennell, **P17** 45, **Y06** 192, **M47** 530; *Vandellia pedunculata* Benth., **FMP2** 481; herb to 50 cm tall; marshy ground; Kd, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

183.9.2 **Lindernia antipoda** (L.) Alston, **P17** 57, **Y06** 199, **M47** 532; *Bonnaya veronicifolia* (Retz.) Spreng., **FMP2** 486 incl. vars. *grandiflora* (Retz.) Hook.*f*. and *verbenifolia* (Colsm.) Hook.*f*.; herb to 30 cm tall; damp grassy places; P. Langkawi, Kd, Pn, Kl, Tg, Pk, Sl, Ml, Sp.

183.9.3 **Lindernia caespitosa** (Blume) Panigrahi, **P02** 320; *Vandellia scabra* Benth., **FMP2** 480; *Lindernia pusilla* (Willd.) Bold., **P17** 41; herb to 10 cm tall; open sandy places; Pn, Kl, Tg, NS, Sp.

183.9.4 **Lindernia ciliata** (Colsm.) Pennell, **P17** 51, **Y06** 200, **M47** 534; *Bonnaya brachiata* Link & Otto, **FMP2** 485; herb to 20 cm tall; damp spots by streams; Kl, Tg, Pk, Ph, Ml, Sp.

183.9.5 **Lindernia crustacea** (L.) F. Muell., **P17** 17, **Y06** 193, **M47** 536; *Vandellia crustacea* (L.) Benth., **FMP2** 479; herb to 20 cm tall; sandy waste ground, paths and drains; throughout.

183.9.6 **Lindernia elata** (Benth.) Wettst., **Y03** 20, **Y06** 187; *Vandellia elata* Benth., **FMP2** 481 in part; *Lindernia urticifolia* (Hance) Bonati, **P17** 31; herb to 25 cm tall; paddy-fields; once from near Besut, Tg.

183.9.7 **Lindernia mollis** (Benth.) Wettst., **Y05** 91, **Y06** 186; *Vandellia mollis* Benth., **FMP2** 480; *Lindernia montana* [*non* Hiern] (Blume) Koord., **P17** 44; herb to 20 cm tall; pathways; Pk.

183.9.8 **Lindernia multiflora** (Roxb.) Mukerjee, **P17** 36; *Vandellia multiflora* (Roxb.) G. Don, **FMP2** 480; herb to 15 cm tall; damp sandy places; once from near Kangar, Ps.

183.9.9 **Lindernia nummulariifolia** (D. Don) Wettst.; **S30** 80; *Lindernia sessiliflora* (Benth.) Wettst., **P17** 10; herb to 10 cm tall; short grass; Ml, Sp; ?naturalized.

183.9.10 **Lindernia procumbens** (Krock.) Borbás, **P17** 29, **Y05** 82, **Y06** 181, **M47** 540; herb to 25 cm tall; once from Pn.

183.9.11 **Lindernia ruellioides** (Colsm.) Pennell, **P17** 54, **Y06** 201; *Bonnaya reptans* (Roxb.) Spreng, **FMP2** 485; herb to 20 cm tall; wet spots in the lowlands and hills; Kl, Pk, Ph, Sl, Ml, Jh, Sp.

183.9.12 **Lindernia tenuifolia** (Colsm.) Alston, **P17** 62; herb to 15 cm tall; marshy ground; Tg.

183.9.13 **Lindernia viscosa** (Hornem.) Bold., **P17** 38, **Y05** 90, **Y06** 184; *Vendellia hirsuta* Benth., **FMP2** 480; herb to 15 cm tall; open sandy places; Kl, Tg, Pk, Ph, Sp.

183.10.1 **Mazus pumilus** (Burm.*f.*) Steenis, **Y05** 45, **Y06** 159; *Mazus rugosus* Lour., **FMP2** 473; stoloniferous herb; weed of cultivation; Sp.

183.11.1 **Microcarpaea minima** (J. König *ex* Retz.) Merr., **Y05** 156, **Y06** 215, **M47** 542 '*Mitracarpaea*'; *Microcarpaea muscosa* R.Br., **FMP2** 486; small tufted herb to 10 cm tall; pond margins, damp places; Pk, Sp.

183.12.1 **Picria fel-terrae** Lour., **Y05** 37, **Y06** 153 ; *Curanga amara* Juss., **FMP2** 484, **C15** 157; herb to 30 cm tall; lowland forest, also on limestone; Kl, Pk, Ph, Sl.

183.13.1 **Scoparia dulcis** L., **FMP2** 488, **Y06** 218, **M47** 544; herb to 60 cm tall; waste ground; common throughout; naturalized from tropical America.

183.14.1 **Stemodia verticillata** (Mill.) Bold., **Y05** 72; herb to 30 cm tall; roadsides, waste places; Sp.

183.15.1 **Striga asiatica** (L.) Kuntze, **Y06** 232, **M47** 546; *Striga hirsuta* Benth., **FMP2** 487; slender hemi-parasitic herb to 15 cm tall; short sward; widespread.

183.16.1 **Torenia atropurpurea** Ridl., **FMP2** 483; *Schizotorenia atropurpurea* (Ridl.) T. Yamaz., **Y06** 206; creeping herb; banks in montane forest; Kd, Pk, Ph, Sl.

183.16.2 **Torenia bimaculata** Ridl., **FMP2** 482; herb to 30 cm tall; river banks; Sg Chaning, Kl.

183.16.3 **Torenia caelestis** Ridl., **FMP2** 483; slender creeping herb; grassy paths; Kota Tinggi, Jh.

183.16.4 **Torenia ciliata** Sm., **FMP2** 482; herb to 30 cm tall; waysides; Ps, Kd, Pn, Kl, Pk.

183.16.5 **Torenia flava** Buch.-Ham. *ex* Benth., **FMP2** 483, **Y04** 606, **Y06** 207; herb to 30 cm tall; pathsides; Pk.

183.16.6 **Torenia polygonoides** Benth., **FMP2** 484; *Legazpia polygonoides* (Benth.) T. Yamaz., **Y05** 154, **Y06** 214; slender prostrate herb; damp grassy places; common throughout.

183.16.7 **Torenia violacea** (Azaola *ex* Blanco) Pennell, **Y04** 620, **Y06** 212, **M47** 548; *Torenia peduncularis* Benth. *ex* Hook.*f*., **FMP2** 482; herb to 30 cm tall; by forest streams; Kd, Pn, Kl, Pk, NS, Ml.

183.17.1 **Wightia borneensis** Hook.*f*., **FMP2** 472; climbing arborescent epiphyte; hill forest; Pk, Ph, Ml.

184. SIMAROUBACEAE

184.1.1 **Ailanthus integrifolia** Lam., **FMi6** 218, **TFM2** 346; tree to 24 m tall; lowland forest; once from Seletar Reservoir, Sp.

184.1.2 **Ailanthus triphysa** (Dennst.) Alston, **FMi6** 219, **TFM2** 346; tree to 18 m tall; lowland forest; Ps, Kd, Pk.

184.2.1 **Brucea javanica** (L.) Merr., **FMi6** 211, **TFM2** 348; *Brucea sumatrana* Roxb., **FMP1** 361; shrub or small tree to 10 m tall; open country; throughout but commoner in the north.

184.3.1 **Eurycoma apiculata** Benn., **FMP1** 363, **FMi6** 206, **TFM2** 349; treelet to 5 m tall; usually in the mountains, about 1200 m; widespread.

184.3.2 **Eurycoma longifolia** Jack, **FMP1** 362, **FMi6** 205, **TFM2** 349; treelet to 5 m tall; lowlands and hills; throughout.

184.4.1 **Harrisonia perforata** (Blanco) Merr., **FMi6** 208, **TFM2** 350; *Harrisonia bennettii* Benn., **FMP1** 360; ?*Harrisonia brownii auct. non* A. Juss., **FMP1** 360; scandent prickly shrub; open country; Ps, ?Kd, ?Pk.

184.5 **Picrasma javanica** Blume, **FMP1** 361, **FMi6** 214, **TFM2** 351; tree to 24 m tall; lowland forest to 750 m; Pk, Sl, NS, Ml.

184.6.1 **Quassia indica** (Gaertn.) Noot., **FMi6** 199, **TFM2** 352; *Samadera indica* Gaertn., **FMP1** 363; tree to 20 m tall; tidal swamps; Jh, Sp.

185. SOLANACEAE

185.1.1 **Browallia americana** L., **S53** 144, **T19** 126; herb; weed of cultivation; hill stations; Cameron Highlands and Genting Highlands, Ph; naturalized from tropical America.

185.2.1 **Lycianthes biflora** (Lour.) Bitter, **B03** 476; *Solanum biflorum* Lour., **FMP2** 467, **C15** 158; *Solanum decemdentatum* Roxb., **FMP2** 466, **C15** 158; shrub; mostly limestone; Kl, Ph, Sl.

185.2.2 **Lycianthes laevis** (Dunal) Bitter, **S53** 144; *Solanum blumei* Nees, **FMP2** 466; shrub to 2 m tall; hill and montane forest; widespread.

185.2.3 **Lycianthes parasitica** (Blume) Bitter, **B03** 476; *Solanum parasiticum* Blume, **FMP2** 466; epiphytic shrub to 1 m tall; lowland forest; Pk, Jh.

185.3.1 **Physalis minima** L., **FMP2** 470; herb to 45 cm tall; waste ground, sea shores; widespread. .

185.4.1 **Solanum capsicoides** All., **H38** 374; *Solanum aculeatissimum auct. non* Jacq., **FMP2** 468; prickly herb to 30 cm tall; sandy sea shores; widespread; naturalized from tropical America.

185.4.2 **Solanum coagulans** Forssk., **FMP2** 468; prickly shrub; waste ground; Kl, Sp.

185.4.3 **Solanum erianthum** D. Don, **H38** 369; *Solanum verbascifolium auct. non* L., **FMP2** 466; shrub to 3 m tall; open ground; Kd, Pn, Kl, Ph, Sl.

185.4.4 **Solanum indicum** L., **FMP2** 468; shrub to 2 m tall; waste ground; Kl, Ph, Sl, Ml.

185.4.5 **Solanum involucratum** Blume, **FMP2** 467; prickly shrub; open places; Ps, Pk.

185.4.6 **Solanum lasiocarpum** Dunal, **H38** 371; *Solanum ferox sensu auctt., non* L., **FMP2** 467; prickly shrub to 1 m tall; waste ground; widespread.

185.4.7 **Solanum mammosum** L., **FMP2** 467; shrub to 1 m tall; roadsides, waste ground; naturalized from tropical America.

185.4.8 **Solanum nigrum** L., **FMP2** 465; herb to 1 m tall; waste ground; common throughout.

185.4.9 **Solanum sarmentosum** Nees, **FMP2** 469; procumbent prickly shrub; garden weed, waste ground; Ph, Ml, Sp.

185.4.10 **Solanum torvum** Sw., **FMP2** 468, **H38** 376; shrub to 2 m tall; waste ground, sometimes cultivated; widespread.

185.4.11 **Solanum trilobatum** L., **FMP2** 469, **H38** 380; slender thorny climber; waste ground; Pn, Sl, Ml; naturalized from continental Asia.

186. STAPHYLEACEAE

186.1.1 **Turpinia ovalifolia** Elmer, **FM16** 58, **TFM1** 448; *Turpinia trifoliata* Ridl., **FMP1** 511; shrub or tree to 8 m tall; lowland and hill forest, sometimes on limestone; P. Langkawi, Kl, Pk, Sl, NS.

186.1.2 **Turpinia sphaerocarpa** Hassk., **FM16** 57, **TFM1** 448; *Turpinia latifolia* Wall. *ex* Ridl., **FMP1** 512; *Turpinia laxiflora* Ridl., **FMP1** 512; tree to 20 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, Ml, Jh, Sp.

There is also one doubtful record of *Turpinia pomifera* (Roxb.) DC. [**FM16** 58, **TFM1** 448] from montane forest in Pk.

187. STERCULIACEAE

187.1.1 **Abroma augusta** (L.) Willd., **FMP1** 286, **FMP2** 355; shrub to 2 m tall; open places; Pk, Ph, Sl.

187.2.1 **Byttneria brevipes** Ridl., **FMP1** 287; slender liana; forest margins; Pk; ?endemic.

187.2.2 **Byttneria curtisii** Oliv., **FMP1** 287; slender liana; lowland and hill forest; scattered.

187.2.3 **Byttneria elegans** Ridl., **FMP1** 288; slender liana; river banks; Pk, Ph.

187.2.4 **Byttneria elliptica** Mast., **FMP1** 288; climbing shrub; Ml.

187.2.5 **Byttneria jackiana** Wall., **FMP1** 287; liana; lowland and hill forest; widespread.

187.2.6 **Byttneria maingayi** Mast., **FMP1** 286; liana; lowland forest margins; widespread.

187.3.1 **Commersonia bartramia** (L.) Merr., **TFM2** 357; *Commersonia platyphylla* Andr., **FMP1** 288; tree to 12 m tall; lowland disturbed sites; widespread.

187.4.1 **Firmiana malayana** Kosterm., **TFM2** 357; *Erythropsis fulgens* (Wall. *ex* Mast.) Ridl., **FMP1** 277; deciduous tree to 24 m tall; lowland and hill forest to 1200 m; NS northward.

187.5.1 **Helicteres angustifolia** L., **FMP1** 282, **C14** 160; *Helicteres lanceolata* DC.; **H33** 411; shrub to 1 m tall; sandy and rocky places, limestone; widely scattered.

187.5.2 **Helicteres hirsuta** Lour., **FMP1** 281; shrub to 3 m tall; open country including limestone; widespread.

187.5.3 **Helicteres isora** L., **FMP1** 281; shrub; open country; Pn, Pk, Ph.

187.5.4 **Helicteres viscida** Blume, **FMP1** 281; shrub to 2 m tall; open country; Kl, Ph.

187.6.1 **Heritiera borneensis** (Merr.) Kosterm., **TFM2** 360; *Tarrietia unifoliolata* Ridl., **FMP1** 279; tree to 45 m tall; lowland forest; Tg, Ph, NS, Jh.

187.6.2 **Heritiera elata** Ridl., **FMP1** 280, **TFM2** 361; coppery-crowned tree to 33 m tall; lowland forest; Tg, Ph, Jh, Sp.

187.6.3 **Heritiera javanica** (Blume) Kosterm., **TFM2** 361; tree to 42 m tall; lowland forest to 600 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh.

187.6.4 **Heritiera kunstleri** (King) Kosterm., **TFM2** 361; *Tarrietia kunstleri* King, **FMP1** 279; tree to 30 m tall; hill forest; once from Gg Bubu, Pk.

187.6.5 **Heritiera littoralis** Dryand., **FMP1** 279, **TFM2** 361; small bushy tree to 15 m tall; sea shores, mangrove swamps; all coasts.

187.6.6 **Heritiera pterospermoides** Kosterm., **TFM2** 363, **C15** 160; tree to 18 m tall; on limestone hills; Kd, Pk.

187.6.7 **Heritiera simplicifolia** (Mast.) Kosterm., **TFM2** 363; *Tarrietia simplicifolia* Mast., **FMP1** 278; tree to 45 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

187.6.8 **Heritiera sumatrana** (Miq.) Kosterm., **TFM2** 364; *Tarrietia perakensis* King, **FMP1** 278; *Tarietia curtisii* King, **FMP1** 278; tree to 30 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, Jh.

187.6.9 **Heritiera sp. A**, **TFM2** 364; tree to 30 m tall; lowland forest; once from Ulu Endau, Jh; ?endemic.

187.7.1 **Kleinhovia hospita** L., **FMP1** 280, **TFM2** 364; tree to 20 m tall; lowland forest; Kd, Pk.

187.8.1 **Leptonychia caudata** (Wall. *ex* G. Don) Burret, **V33** 451; *Leptonychia glabra* Turcz., **FMP1** 289 incl. var. *mastersiana* King, **TFM2** 365; shrub or small tree to 12 m tall; lowlands to lower montane forest; Ps, Kd, Pn, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

187.8.2 **Leptonychia parviflora** (Ridl.) Veldkamp & Flipphi, **V33** 455; *Leptonychiopsis parviflora* Ridl., **FMP1** 290, **TFM2** 355; small tree; disturbed sites in lowland forest; Gg Panti and Gg Pulai, Jh; endemic.

187.9.1 **Melochia corchorifolia** L., **FMP1** 284, **G11** 304, **TFM2** 366, **M47** 554; subshrub to 60 cm tall; waste ground, open grassy places; throughout.

187.9.2 **Melochia umbellata** (Houtt.) Stapf, **TFM2** 366, **G11** 220; *Melochia velutina* Wall. *ex* Bedd., **FMP1** 285; tree to 10 m tall; often near rivers, disturbed sites; Ml northward.

187.10.1 **Pentapetes phoenicea** L., **FMP1** 284; herb to 120 cm tall; open places; Ps.

187.11.1 **Pterocymbium javanicum** R.Br., **FMP1** 276, **TFM2** 366; tree; alluvial flats of river floodplains; NS northward.

187.11.2 **Pterocymbium tubulatum** (Mast.) Pierre, **FMP1** 277, **TFM2** 367; tree; lowland forest; Kl, Ml, Jh, Sp.

187.12.1 **Pterospermum acerifolium** (L.) Willd., **TFM2** 368; tree to 30 m tall; lowlands and hills, also on limestone; Ps, Kl, Ph, Sl.

187.12.2 **Pterospermum diversifolium** Blume, **FMP1** 282, **TFM2** 368; tree to 20 m tall; lowland forest; scattered.

187.12.3 **Pterospermum jackianum** Wall. *ex* Mast., **FMP1** 283, **TFM2** 369; tree to 15 m tall; lowlands, sometimes on limestone; P. Langkawi, Pn, Kl.

187.12.4 **Pterospermum javanicum** Jungh., **TFM2** 369; *Pterospermum blumeanum* Korth., **FMP1** 283; tree to 42 m tall; lowland and hill forest to 1000 m; Kd, Pn, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

187.12.5 **Pterospermum lancifolium** Roxb., **TFM2** 369; tree to 15 m tall; open country and on limestone; Ps, P. Langkawi, Kd, Pk.

187.12.6 **Pterospermum pectiniforme** Kosterm., **TFM2** 369; tree to 23 m tall; on limestone; Ps, P. Langkawi.

187.13.1 **Pterygota alata** (Roxb.) R. Br., **TFM2** 371; tree to 50 m tall; lowland forest near rivers; NS and Ph northward.

187.14.1 **Scaphium linearicarpum** (Mast.) Pierre, **FMP1** 275, **TFM2** 374; tree to 36 m tall; lowland forest to 720 m; Kd, Kl, Tg, Pk, Ph, Sl, Jh, Sp.

187.14.2 **Scaphium longiflorum** Ridl., **FMP1** 276, **TFM2** 374; tree to 36 m tall; swampy lowland forest; Kd, Pn, Pk, Sl, Jh; endemic.

187.14.3 **Scaphium macropodum** (Miq.) Beumée *ex* Heyne, **TFM2** 374; *Scaphium affine* (Mast.) Pierre, **FMP1** 275; tree to 45 m tall; lowland and hill forest to 1200 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

187.14.4 **Scaphium scaphigerum** (G. Don) Guibourt & Planch., **TFM2** 376; tree to 36 m tall; lowland forest; Ps, Kd, Kl, Pk.

187.15.1 **Sterculia balanghas** L., **T06** 140; shrub, shale beach; once from P. Langkawi.

187.15.2 **Sterculia coccinea** Jack, **TFM2** 377, **T06** 129; *Sterculia laevis* Wall., **FMP1** 269; *Sterculia elongata* Ridl., **FMP1** 270, **TFM2** 377; *Sterculia neriifolia* Ridl., **FMP5** 292; shrub to 3 m tall; lowland forest ; common throughout.

187.15.3 **Sterculia cordata** Blume, **TFM2** 378, **T06** 63; *Sterculia javanica* R. Br., **FMP1** 274; tree to 30 m tall; lowland forest; Kd, Pn, Pk, Sl, Ml, Jh.

187.15.4 **Sterculia cuspidata** R.Br., **T06** 126; *Sterculia hyposticta auct. non* Miq., **FMP1** 269, **TFM2** 377; *Sterculia microphylla* Ridl., **TFM2** 377; *Sterculia sp. D*, **TFM2** 377; small tree to 10 m tall; lowland and hill forest; Kd, Pn, Tg, Pk, Ph, NS, Ml, Jh.

187.15.5 **Sterculia foetida** L., **FMP1** 268, **TFM2** 378, **T06** 44; tree to 30 m tall; rocky and sandy coasts; north and east of Malaya.

187.15.6 **Sterculia gilva** Miq., **T06** 106; *Sterculia bicolor* Mast., **FMP1** 274, **TFM2** 378; tree to 40 m tall; mostly swamp forest; Tg, Pk, Ph, Ml, Jh.

187.15.7 **Sterculia hypochra** Pierre, **T06** 53; tree to 30 m tall; on limestone; P. Langkawi.

187.15.8 **Sterculia lancaviensis** Ridl., **FMP1** 270, **TFM2** 377, **T06** 145, **C15** 161; small tree; limestone; P. Langkawi, Kl.

187.15.9 **Sterculia macrophylla** Vent., **FMP1** 268, **TFM2** 382, **T06** 68; tree to 36 m tall; lowland forest to 450 m; Kd, Kl, Pk, Sl, Ml, Jh, Sp.

187.15.10 **Sterculia megistophylla** Ridl., **T06** 93; *Sterculia sp. B*, **TFM2** 378; tree to 20 m tall; Sg Lembing, Ph, and Sg Kayu Ara, Jh.

187.15.11 **Sterculia oblongata** R.Br., **T06** 150; *Sterculia kunstleri* King, **FMP1** 270, **TFM2** 382; *Sterculia sp. A*, **TFM2** 377 in part; tree to 30 m tall; lowland forest; Kd, Pk, Ph, Sl, Ml.

187.15.12 **Sterculia parviflora** Roxb., **FMP1** 271, **TFM2** 382, **T06** 50; *Sterculia holttumii* Ridl., **R14** 471; briefly deciduous tree to 30 m tall; lowland forest; P. Langkawi, Kl, Tg, Ph, Sl, NS, Jh, Sp.

187.15.13 **Sterculia parvifolia** Wall. *ex* R.Br., **FMP1** 270, **TFM2** 377, **T06** 128; small tree to 10 m tall; hill forest; Pn, Pk, Sl.

187.15.14a **Sterculia rubiginosa** Vent. var. **ensifolia** (Mast.) Ridl., **FMP1** 273, **TFM2** 378, **T06** 84; *Sterculia angustifolia auct. non* Roxb., **FMP1** 274, **TFM2** 378, **C14** 161; tree to 12 m tall; lowland and hill forest, also on limestone; widespread.

187.15.14b **Sterculia rubiginosa** Vent. var. **rubiginosa**, **FMP1** 271, **TFM2** 378, **T06** 80; *Sterculia brachycarpa* Ridl., **FMP1** 273, **TFM2** 378; *Sterculia rostrata* Ridl., **FMP1** 273, **TFM2** 378; *Sterculia sp. C*, **TFM2** 378; tree to 10 m tall; lowland to montane forest; throughout.

187.15.14c **Sterculia rubiginosa** Vent. var. **setistipula** (Merr.) Tantra, **T06** 86; *Sterculia hispidissima* Ridl., **FMP1** 273; small tree; hill forest; Sl.

187.15.15 **Sterculia scortechinii** King, **FMP1** 271, **TFM2** 377, **T06** 51; tree to 20 m tall; lowland forest; Pk, Jh.

187.15.16 **Sterculia stipulata** Korth., **T06** 88; tree to 15 m tall; lowland forest; once from Kuala Trengganu, Tg.

187.16.1 **Waltheria arenaria** Ridl., **FMP1** 285; wiry creeper; sandy places near the sea; Kuala Kelantan, Kl; ?endemic.

187.16.2 **Waltheria indica** L., **FMP1** 285; shrub to 1 m tall; sea shores; Ml, Sp.

188. STYLIDIACEAE

188.1.1 **Stylidium tenellum** Sw., **FMP2** 197, **FM14** 530; slender herb to 20 cm tall; wet grassy places, rice-fields; north of Malaya.

189. STYRACACEAE

189.1.1a **Styrax benzoin** Dryand. var. **benzoin**, **FMP2** 297, **FM14** 52, **TFM3** 263; tree to 30 m tall; lowland and hill forest to 800 m; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

189.1.1b **Styrax benzoin** Dryand. var. **hiliferum** Steenis, **FMi4** 52, **TFM3** 263; tree to 30 m tall; lowland forest; Ph.

189.1.2a **Styrax crotonoides** C.B. Clarke ssp. **crotonoides**, **FMP2** 298, **FMi4** 53, **TFM3** 263; tree to 30 m tall; lowland forest; Pn, Pk, Jh, Sp.

189.1.2b **Styrax crotonoides** C.B. Clarke ssp. **fraserensis** (F.E. Putz & Ng) Steenis, **FMi9** 568; *Styrax fraserensis* F.E. Putz & Ng, **TFM3** 263; small tree; montane forest at 1300 m; Fraser's Hill, Ph; endemic.

189.1.3 **Styrax paralleloneurus** Perkins, **FMi4** 53, **TFM3** 264; tree to 27 m tall; montane forest at 800–1700 m; Kd, Pk, Ph, Sl.

189.1.4 **Styrax ridleyanus** Perkins, **FMi9** 569 '*ridleyanum*'; tree to 30 m tall; lowland forest; Tg, ?Ph.

189.1.5 **Styrax serrulatus** Roxb. var. **rugosus** Steenis, **FMP2** 296, **FMi4** 55, **TFM3** 264 '*serrulatum* var. *rugosum*'; tree to 17 m tall; lowland forest; Ps, Pn, Ph, Ml.

190. SYMPLOCACEAE

190.1.1 **Symplocos adenophylla** Wall. *ex* G. Don, **FMP2** 303 incl. vars. *montana* Ridl. and *virgata* Wall. *ex* Brand, **FMi8** 239, **TFM3** 268; *Symplocos fulvosa* King & Gamble, **FMP2** 300; *Symplocos pruniflora* Ridl., **FMP2** 304; shrub or tree to 15 m tall; sea coasts to montane forest at 1500 m; widespread.

190.1.2 **Symplocos anomala** Brand, **FMi8** 239, **TFM3** 268; *Symplocos concolor* Brand, **FMP2** 304; shrub or tree to 12 m tall; lower montane forest at 1000 m; Pn, Pk.

190.1.3 **Symplocos barringtoniifolia** Brand, **FMi8** 242, **TFM3** 268; *Symplocos rigida* (*non* G. Don) C.B. Clarke, **FMP2** 306; tree to 24 m tall; lowland and hill forest to 750 m; Tg, Pk, Ph, Sl, Ml, Jh.

190.1.4 **Symplocos calycodactylos** Brand, **FMP2** 305, **FMi8** 244, **TFM3** 268; shrub to 3 m tall; hill forest at 900–1000 m; once each from Kd and Pk; endemic.

190.1.5 **Symplocos celastrifolia** Griff. *ex* C.B. Clarke, **FMP2** 302, **FMi8** 244, **TFM3** 269; tree to 30 m tall; lowland to montane forest; Pn, Kl, Tg, Ph, Sl, Ml, Jh, Sp.

190.1.6 **Symplocos cerasifolia** Wall. *ex* DC., **FMP2** 306, **FMi8** 245, **TFM3** 269; tree to 24 m tall; lowland to montane forest at 1200 m; Pn, Kl, Tg, Pk, Ph, NS, Ml.

190.1.7a **Symplocos cochinchinensis** (Lour.) S. Moore ssp. **cochinchinensis**, **FMı8** 246, **TFM3** 269; *Symplocos ferruginea* Roxb., **FMP2** 302; tree to 18 m tall; lowland to montane forest; Pn, Kl, Tg, Ph, NS, Ml.

190.1.7b **Symplocos cochinchinensis** (Lour.) S. Moore ssp. **laurina** (Retz.) Noot., **FMı8** 248, **TFM3** 269; *Symplocos spicata* Roxb., **FMP2** 301; tree to 18 m tall; lowland and hills to 1500 m; P. Langkawi, Kl, Tg, Pk, Ph, Ml.

190.1.8a **Symplocos crassipes** C.B. Clarke var. **brandiana** (King & Gamble) Noot., **FMı8** 257, **TFM3** 270; *Symplocos brandiana* King & Gamble, **FMP2** 304; tree to 8 m tall; lowland to montane forest; Pk, Sl, Jh; endemic variety.

190.1.8b **Symplocos crassipes** C.B. Clarke var. **crassipes**, **FMP2** 305, **FMı8** 257, **TFM3** 270; shrub; only known from type, Jh; endemic variety.

190.1.8c **Symplocos crassipes** C.B. Clarke var. **curtisii** (Oliv.) Noot., **FMı8** 257, **TFM3** 270; *Symplocos monticola* King & Gamble, **FMP2** 301; *Symplocos curtisii* Oliv., **FMP2** 305; shrub to 5 m tall; lowland to montane forest, 300–1200 m; Tg, Pk, Ph, Sl.

190.1.8d **Symplocos crassipes** C.B. Clarke var. **ernae** (Brand) Noot., **FMı8** 258, **TFM3** 270; small tree; lower montane forest; once from near Taiping, Pk.

190.1.8e **Symplocos crassipes** C.B. Clarke var. **penangiana** (King & Gamble) Noot., **FMı8** 258, **TFM3** 270; *Symplocos penangiana* King & Gamble, **FMP2** 306; tree to 10 m tall; lowland forest; Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh.

190.1.9 **Symplocos fasciculata** Zoll., **FMP2** 301, **FMı8** 259, **TFM3** 270; small tree to 15 m tall; lowland forest, common in secondary stands; Pk, Ph, Sl, NS, Ml, Jh.

190.1.10 **Symplocos glomerata** King *ex* C.B. Clarke, **FMı8** 260, **TFM3** 270; small tree to 6 m tall; montane forest at 1500 m; summit of Gg Lawit, Tg.

190.1.11a **Symplocos henschelii** (Moritzi) Benth. *ex* C.B. Clarke var. **henschelii**, **FMı8** 214, **TFM3** 270; *Cordyloblaste scortechinii* Ridl., **FMP2** 309; tree to 30 m tall; montane forest; Kd, Ph, Jh.

190.1.11b **Symplocos henschelii** (Moritzi) Benth. *ex* C.B. Clarke var. **maingayi** (Benth. *ex* C.B. Clarke) Noot., **FMı8** 214, **TFM3** 272; *Cordyloblaste maingayi* (Benth. *ex* C.B. Clarke) Ridl., **FMP2** 309; tree to 21 m tall; lowland forest; Pk, Ml, Jh.

190.1.12 **Symplocos laeteviridis** Stapf, **FMı8** 261, **TFM3** 272; small tree; lower montane forest at 1000 m; once from Maxwell's Hill, Pk.

190.1.13 **Symplocos lucida** (Thunb.) Siebold & Zucc., **FMı8** 264; *Symplocos ridleyi* King & Gamble, **FMP2** 302; shrub or tree to 20 m tall; lowland forest; Sp.

190.1.14 **Symplocos nivea** Brand, **FMP2** 300, **FMi8** 265, **TFM3** 272; tree to 18 m tall; lowland forest; once each from Pn and Jh; endemic.

190.1.15 **Symplocos odoratissima** (Blume) Choisy & Zoll., **FMP2** 299, **FMi8** 266, **TFM3** 272; *Symplocos pulverulenta* King & Gamble, **FMP2** 300; tree to 30 m tall; lowland forest; Pk, Ph, Jh.

190.1.16a **Symplocos ophirensis** C.B. Clarke ssp. **ophirensis** var. **densireticulata** Noot., **FMi8** 268, **TFM3** 272; shrub 2–4 m tall; montane forest at 1500 m; twice from Cameron Highlands, Ph.

190.1.16b **Symplocos ophirensis** C.B. Clarke ssp. **ophirensis** var. **ophirensis**, **FMP2** 305, **FMi8** 267, **TFM3** 272; shrub or small tree; montane forest above 1200 m; Pk, Sl, Jh; endemic variety.

190.1.16c **Symplocos ophirensis** C.B. Clarke ssp. **perakensis** (King & Gamble) Noot., **FMi8** 268, **TFM3** 273; *Symplocos caudata auct. non* Wall. *ex* G. Don, **FMP2** 300; *Symplocos perakensis* King & Gamble, **FMP2** 304; tree to 18 m tall; lowland forest; Pk, Ph, Sl, NS.

190.1.17a **Symplocos pendula** Wight var. **hirtistylis** (C.B. Clarke) Noot., **FMi8** 215, **TFM3** 273; *Cordyblaste confusa* (Brand) Ridl., **FMP2** 307; *Cordyloblaste obovata* Ridl., **FMP2** 308; *Cordyblaste crenulata* Ridl., **FMP2** 309; shrub or tree; montane forest above 1200 m; Ph, Jh.

190.1.17b **Symplocos pendula** Wight var. **pendula**, **FMi8** 214, **TFM3** 273; *Cordyloblaste pulcherrima* (Ridl.) Ridl., **FMP2** 308; shrub or tree; montane forest above 1200 m; Tg, Pk, Ph, Sl, Jh.

190.1.18 **Symplocos pyriflora** Ridl., **FMP2** 307, **FMi8** 270, **TFM3** 273; small tree; montane forest at 1450 m; once each from Gg Tapis and Gg Tahan, Ph; endemic.

190.1.19 **Symplocos rubiginosa** Wall. *ex* DC., **FMP2** 306, **FMi8** 271, **TFM3** 273; tree to 18 m tall; lowland to montane forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

190.1.20 **Symplocos sumuntia** Buch.-Ham. *ex* D. Don, **FMi8** 271, **TFM3** 274; shrub or small tree; montane forest at 1800 m; once each from Cameron Highlands and Gg Tahan, Ph.

190.1.21 **Symplocos tricoccata** Noot., **FMi8** 272, **TFM3** 274; shrub to 4 m tall; twice from Pk.

190.1.22 **Symplocos wikstroemiifolia** Hayata, **FMi8** 263; *Symplocos microtricha* Hand.-Mazz., **TFM3** 272; shrub or tree to 20 m tall; hill and montane forest; Ph.

191. TETRAMERISTACEAE

191.1.1 **Tetramerista glabra** Miq., **FMP1** 367, **TFM4** 470; tree to 35 m tall; lowland freshwater and peat swamp forests; Kd, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

192. THEACEAE

192.1.1 **Adinandra acuminata** Korth., **FMP1** 194, **TFM3** 277; tree to 20 m tall; lowland to lower montane forest at 1200 m; Kd to Sp.

192.1.2 **Adinandra angulata** Ridl., **FMP1** 195, **TFM3** 278; tree to 16 m tall; montane forest at 1700–1800 m; Gg Tahan, Ph; endemic.

192.1.3 **Adinandra corneriana** Kobuski, **TFM3** 278; tree to 10 m tall; lowland forest; Tg, Ph, Jh; endemic.

192.1.4 **Adinandra dumosa** Jack, **FMP1** 194, **TFM3** 278; tree to 20 m tall; secondary forest; throughout, commoner in the south.

192.1.5 **Adinandra integerrima** T. Anderson *ex* Dyer, **FMP1** 196, **TFM3** 279; *Adinandra hullettii* King, **FMP1** 196; tree; lowland forest below 750 m; Kd, Pn, Pk, Ph, Jh, Sp; endemic.

192.1.6 **Adinandra maculosa** T. Anderson *ex* Dyer, **FMP1** 195, **TFM3** 279; tree to 25 m tall; hill and montane forest below 1500 m; Pn, Kl, Tg, Pk, Sl, Ph, Jh; endemic.

192.1.7 **Adinandra parvifolia** Ridl., **FMP1** 195, **TFM3** 279; tree to 15 m tall; montane forest at 1500–2000 m; Kd, Pk, Ph; ?endemic.

192.1.8 **Adinandra phlebophylla** Hance, **TFM3** 279; tree to 25 m tall; lowland forest; P. Langkawi, Kd.

192.1.9 **Adinandra sarosanthera** Miq., **TFM3** 280; *Adinandra macrantha* Teijsm. & Binn., **FMP1** 195; tree to 30 m tall; lowland to montane forest at 1500 m; Pn, Kl, Tg, Pk, Ph, Sl, Jh.

192.1.10 **Adinandra villosa** Choisy, **FMP1** 196, **TFM3** 280; tree to 15 m tall; lowland to montane forest at 1800 m; Pn, Tg, Pk, Ph, Sl.

192.2.1 **Anneslea fragrans** Wall. var. **crassipes** (Hook.*f. ex* Choisy) Pierre, **TFM3** 280; *Anneslea crassipes* Hook.*f. ex* Choisy, **FMP1** 193; tree to 25 m tall; montane forest at 800–2000 m; Kl, Pk, Ph, Sl, Ml, Jh.

192.3.1 **Eurya acuminata** DC., **FMP1** 199, **TFM3** 282; *Eurya monticola* (Ridl.) Ridl., **FMP1** 199; *Eurya wrayi* King, **FMP1** 199; shrub or tree to 15 m tall; lowlands to mountains tops; throughout.

192.3.2 **Eurya nitida** Korth., **TFM3** 282; shrub or tree to 10 m tall; montane forest above 900 m; Kd, Tg, Pk, Ph.

192.3.3 **Eurya trichocarpa** Korth., **FMP1** 200, **TFM3** 284; shrub or small tree; montane forest at 1000–1300 m; P. Langkawi, Pk, Ph.

192.4.1 **Gordonia concentricicatrix** Burkill, **FMP1** 203, **TFM3** 285; tree to 33 m tall; lowland forest; Pk, Ph, Sl, NS, Ml, Jh; endemic.

192.4.2 **Gordonia hirtella** Ridl., **FMP1** 204, **TFM3** 285; tree; hill forest; Bt Kutu, Sl; endemic.

192.4.3 **Gordonia imbricata** King, **FMP1** 203, **TFM3** 285; tree to 15 m tall; hill and montane forest above 600 m; Kl, Tg, Pk, Ph, Jh; endemic.

192.4.4 **Gordonia maingayi** Dyer, **FMP1** 204, **TFM3** 285; tree to 18 m tall; lowland to montane forest at 1600 m; Kl, Tg, Pk, Ph, Sl, NS, Ml; endemic.

192.4.5 **Gordonia multinervis** King, **FMP1** 203, **TFM3** 286; tree to 30 m tall; lowland forest below 800 m; Pn, Kl, Tg, Pk, Ph, Ml, Jh, Sp; endemic.

192.4.6 **Gordonia penangensis** Ridl., **FMP1** 203, **TFM3** 286; tree to 13 m tall; lowland forest; Pn, Pk, Ph, Sp; endemic.

192.4.7 **Gordonia scortechinii** King, **FMP1** 204, **TFM3** 286; tree; lowland forest; Pk, Ph; endemic.

192.4.8 **Gordonia singaporiana** Wall. *ex* Ridl., **FMP1** 202, **TFM3** 286; tree to 40 m tall; lowland forest; Pn, Pk, Ph, NS, Ml, Jh, Sp; endemic.

192.4.9 **Gordonia taipingensis** Burkill, **FMP1** 204, **TFM3** 288; tree to 20 m tall; lowland and hill forest to 1400 m; Pk; endemic.

192.5.1 **Pyrenaria acuminata** Planch., **FMP1** 200, **TFM3** 290; tree to 10 m tall; lowland forest; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

192.5.2 **Pyrenaria garrettiana** Craib, **TFM3** 290; tree to 10 m tall; montane forest at 1500 m; Ph.

192.5.3 **Pyrenaria kunstleri** King, **FMP1** 201, **TFM3** 291; tree to 15 m tall; lowland forest; Kd, Pn, Pk, Ph, Sl.

192.5.4 **Pyrenaria pahangensis** H. Keng, **TFM3** 291; shrub to 4 m tall; lowland forest along streams; Ph; endemic.

192.5.5 **Pyrenaria sp. A**, **TFM3** 291; tree ; lowland forest; Jh; ?endemic.

192.6.1 **Schima monticola** Kurz, **K10** 83; *Schima noronhae* Reinw. *ex* Blume var. *rigida* Ridl., **FMP1** 201; tree to 35 m tall; montane forest above 1400 m; Tg, Ph, Sl.

192.6.2 **Schima wallichii** (DC.) Korth., **TFM3** 291, **K10** 85; *Schima noronhae* Reinw. *ex* Blume, **FMP1** 201; shrub or tree to 45 m tall; lowlands to mountain tops; widespread.

192.7.1 **Ternstroemia bancana** Miq., **FMP1** 197, **TFM3** 293; tree to 20 m tall; lowland forest to 500 m; Pk, Ph, Sl, Ml, Jh.

192.7.2 **Ternstroemia corneri** H. Keng, **TFM3** 293; tree to 20 m tall; freshwater swamp forest; S.E. Jh; endemic.

192.7.3 **Ternstroemia evenia** (King) A.C. Sm., **TFM3** 295; *Illicium evenium* King, **FMP1** 19; *Ternstroemia scortechinii* King, **FMP1** 198; tree to 10 m tall; lowlands to mountain tops; Kl, Pk, Ph, Sl; endemic.

192.7.4 **Ternstroemia maclellandiana** Ridl., **FMP1** 198, **TFM3** 295; tree to 10 m tall; montane forest above 1000 m; Kl, Tg, Pk, Ph, Sl.

192.7.5 **Ternstroemia montana** Ridl., **FMP1** 198; shrub; montane forest about 1500 m; Kd, Pk, Ph; endemic.

192.7.6 **Ternstroemia penangiana** Choisy, **FMP1** 197, **TFM3** 295; tree to 20 m tall; lowland and hill forest to 1000 m; Kd, Pn, Kl, Pk, Ph, Sl, Ml, Jh, Sp.

192.7.7 **Ternstroemia wallichiana** (Griff.) Engl., **FMP1** 198, **TFM3** 295; tree to 20 m tall; lowland forest; Ps, Kd, Pn, Tg, Ph, Jh, Sp.

193. THYMELAEACEAE

193.1.1 **Aquilaria beccariana** Tiegh., **FM16** 13, **TFM2** 385; tree to 20 m tall; swampy lowland forest; S.E. Jh.

193.1.2 **Aquilaria hirta** Ridl., **FMP3** 148, **FM16** 12, **TFM2** 385; tree to 15 m tall; lowland forest; Tg, Ph, Jh, Sp.

193.1.3 **Aquilaria malaccensis** Lam., **FMP3** 147, **FM16** 9, **TFM2** 385; tree to 36 m tall; lowland and hill forest to 750 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

193.1.4 **Aquilaria microcarpa** Baill., **FM16** 9, **TFM2** 385; tree to 36 m tall; lowland forest; Sp.

193.1.5 **Aquilaria rostrata** Ridl., **FMP3** 148, **FM16** 13, **TFM2** 385; tree; montane forest; dubious species known only from type collections, Gg Tahan, Ph; endemic.

193.2.1 **Daphne composita** (L.*f.*) Gilg, **FM16** 37, **TFM2** 384; *Daphne pendula* Sm. *nom. illeg.*, **FMP3** 144; shrub to 5 m tall; montane forest; Pk, Ph, Sl, Ml.

193.3.1 **Enkleia malaccensis** Griff., **FMP3** 147, **FMi6** 25, **TFM2** 384; liana reaching 30 m long; lowland forest; Ml, Sp.

193.4.1 **Gonystylus acuminatus** Airy Shaw, **FMi4** 356, **TFM2** 388; tree to 25 m tall; one doubtful specimen from Kokmoi F.R., Kd.

193.4.2 **Gonystylus affinis** Radlk., **FMi4** 357, **TFM2** 388; tree to 33 m tall; lowland forest to 330 m; widespread.

193.4.3 **Gonystylus bancanus** (Miq.) Kurz, **FMi4** 361, **TFM2** 388; tree to 27 m tall (sometimes even bigger); lowland peat swamp forest; Pk, Sl, Jh.

193.4.4 **Gonystylus brunnescens** Airy Shaw, **FMi4** 356, **TFM2** 388; tree to 36 m tall; lowland forest, often near the sea; Pn, Tg, Pk, Ph.

193.4.5 **Gonystylus confusus** Airy Shaw, **FMi4** 357, **TFM2** 391; tree to 30 m tall; lowland forest to 600 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.

193.4.6 **Gonystylus macrophyllus** (Miq.) Airy Shaw, **FMi4** 354, **TFM2** 388; tree to 45 m tall; lowland forest; once each from Kuantan, Ph, and Mawai, Jh.

193.4.7 **Gonystylus maingayi** Hook.*f.*, **FMP1** 322, **FMi4** 359, **TFM2** 391; tree to 40 m tall; lowland forest; Kl, Pk, Ph, Sl, NS, Jh.

193.5.1 **Linostoma pauciflorum** Griff., **FMP3** 146, **FMi6** 27, **TFM2** 384; liana to 30 m long; lowland forest margins, often near the sea; Ps, Kd, Pn, Pk, Ph, Ml, Sp.

193.6.1 **Phaleria capitata** Jack, **FMi6** 20, **TFM2** 384, **C31** 221; shrub or small tree to 9 m tall; freshwater swamp forest; Jh.

193.7.1 **Wikstroemia androsaemifolia** Decne., **FMi6** 33, **TFM2** 384, **C15** 161; shrub to 2.5 m tall; on limestone hills; Kl, Ph, Sl.

193.7.2 **Wikstroemia indica** (L.) C.A. Mey., **FMi6** 34, **C15** 162; *Wikstroemia viridiflora* Meisn., **FMP3** 145; shrub to 3 m tall; lowland and hill forest including limestone; widespread.

193.7.3 **Wikstroemia polyantha** Merr., **FMi6** 32; *Wikstroemia candolleana auct. non* Meisn., **FMP3** 145; shrub or small tree to 7 m tall; lowland to montane forest; Kd, Kl, Pk, Ph, Sl, Jh.

193.6.4 **Wikstroemia ridleyi** Gamble, **FMP3** 146, **FMi6** 34; shrub to 2 m tall; open sandy places, forest margins; Kl, Tg, Ph, (Sp introduced).

194. TILIACEAE

194.1.1 **Berrya cordifolia** (Willd.) Burret, **TFM2** 393, **P16** 69; *Berrya ammonilla* Roxb., **FMP1** 299; small crooked tree; lowlands including on limestone; P. Langkawi, Kd.

194.2.1 **Brownlowia argentata** Kurz, **TFM2** 394; *Brownlowia riedelii* Hemsl., **FMP1** 292; shrub or small tree to 18 m tall; mangroves, tidal channels; widespread.

194.2.2 **Brownlowia helferiana** Pierre, **TFM2** 395; *Brownlowia scortechinii* King, **FMP1** 292; tree to 24 m tall; lowland forest; Tg, Pk, Sl, NS.

194.2.3 **Brownlowia kleinhovioidea** King, **FMP1** 292, **TFM2** 395; tree; lowland forest; only known from type, Pk; endemic.

194.2.4 **Brownlowia macrophylla** King, **FMP1** 292, **TFM2** 395; small tree to 15 m tall; lowland forest; Pk.

194.2.5 **Brownlowia tersa** (L.) Kosterm., **TFM2** 394; *Brownlowia lanceolata* Benth., **FMP1** 291; shrub to 5 m tall; mangrove; widespread.

194.2.6 **Brownlowia velutina** Kosterm., **TFM2** 395; small tree; known only from type, Tg; endemic.

194.3.1 **Colona javanica** (Blume) Burret, **TFM2** 395, **P16** 61; *Colombia integrifolia* Ridl., **FMP1** 306; small tree; on limestone; once from Lenggong, Pk.

194.3.2 **Colona merguensis** (Planch. *ex* Mast.) Burret, **TFM2** 395; *Columbia curtisii* Ridl., **FMP1** 307; *Columbia diptera* Ridl., **FMP1** 307; *Colona diptera* (Ridl.) Craib, **P16** 65; small tree to 12 m tall; mostly on limestone; Ps, P. langkawi.

194.3.3 **Colona serratifolia** Cav., **TFM2** 396; *Columbia serratifolia* (Cav.) DC., **FMP1** 306; small tree to 15 m tall; near the sea; Ph, Jh.

194.4.1 **Corchorus aestuans** L.; **P16** 30; *Corchorus acutangulus* Lam., **FMP1** 306; herb or subshrub; waste ground; widespread.

194.4.2 **Corchorus capsularis** L., **FMP1** 305, **P16** 32; shrub to 1 m tall; waste ground; Ps, Pk.

194.4.3 **Corchorus olitorius** L., **FMP1** 305, **P16** 28; *Corchorus tridens* L., **FMP1** 305; shrub to 60 cm tall; open dry places; Pn, Sl, Jh.

194.5.1 **Diplodiscus hookerianus** (King) Kosterm., **TFM2** 396; *Pentace hookeriana* King, **FMP1** 294; tree; lowland forest; only known from type, Kinta River, Pk; endemic.

194.5.2 **Diplodiscus scortechinii** (King) P.S. Ashton *ex* Kochummen, **TFM2** 396; *Pentace scortechinii* King, **FMP1** 297; tree; twice from Pk; endemic.

194.6.1 **Grewia laevigata** Vahl, **P16** 26; *Grewia acuminata* Juss., **TFM2** 397; *Grewia umbellata* Roxb. ex DC., **FMP1** 300; liana; lowland forest margins; common and widespread.

194.6.2 **Grewia viminea** Wall. *ex* Burret, **TFM2** 397; *Grewia polygama* Roxb. var. *curtisii* Ridl., **FMP5** 294; shrub; limestone hills; Ps, P. Langkawi, Kd.

194.6.3 **Grewia sp. nov.**; *Grewia sclerophylla auct. non* Roxb. *ex* G. Don, **FMP5** 293, **TFM2** 397; shrub; twice from Grik area, Pk.

194.7.1 **Microcos antidesmifolia** (King) Burret, **B40** 780; *Grewia antidesmifolia* King, **FMP1** 302 incl. var. *hirsuta* King, **TFM2** 399; tree to 24 m tall; lowland forest, often near rivers; Kl, Tg, Pk, Ph, Sl, Jh.

194.7.2 **Microcos blattifolia** (Corner) R.S. Rao; *Grewia latifolia* (*non* Muell. *ex* Benth.) Mast., **FMP1** 300; *Microcos latifolia* (Mast.) Burret, **B40** 781; *Grewia blattifolia* Corner, **TFM2** 399; small tree sometimes to 24 m tall; lowland and hill forest to 1000 m; widespread.

194.7.3 **Microcos erythrocarpa** (Ridl.) Airy Shaw; *Grewia erythrocarpa* Ridl., **FMP1** 301; small tree to 5 m tall; lowland forest to 600 m; widespread; endemic.

194.7.4 **Microcos fibrocarpa** (Mast.) Burret, **B40** 782, **P16** 38; *Grewia fibrocarpa* Mast., **FMP1** 301, **TFM2** 397; small tree; lowland forest; scattered widely.

194.7.5 **Microcos globulifera** (Mast.) Burret, **B40** 782; *Grewia globulifera* Mast., **FMP1** 302, **TFM2** 397; small tree; lowland forest; Pk to Jh; endemic.

194.7.6 **Microcos hirsuta** (Korth.) Burret, **B40** 782; *Grewia omphacarpa* Miq., **FMP1** 301; *Grewia hirsuta* [*non* Vahl] (Korth.) Kochummen, **TFM2** 397; small tree; lowland forest; widespread.

194.7.7 **Microcos lanceolata** (Miq.) Burret, **B40** 778; *Grewia miqueliana* Kurz, **FMP1** 302, **TFM2** 397; shrub or small tree; lowland forest; mostly west coast states.

194.7.8 **Microcos latistipulata** (Ridl.) Burret, **B40** 795; *Grewia latistipulata* Ridl., **FMP5** 293; tree; once from Klang, Sl.

194.7.9 **Microcos laurifolia** (Hook. *ex* Mast.) Burret, **B40** 771, **P16** 39; *Grewia florida auct. non* Miq., **FMP1** 303; *Grewia laurifolia* Hook. *ex* Mast., **TFM2** 399; tree to 30 m tall; lowland and hill forest to 1000 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml, Jh.

194.7.10 **Microcos tomentosa** Sm., **B40** 776, **P16** 37; *Grewia paniculata* Roxb. *ex* DC., **FMP1** 300, **TFM2** 397; small bushy tree; open places; common and widespread.

194.8.1 **Muntingia calabura** L., **K09** 88, **P16** 43; shrub or small tree; waste ground, around towns and villages; throughout; naturalized from tropical America.

194.9.1 **Pentace acuta** Ridl., **FMP1** 297, **TFM2** 401; shrub or small tree; lowland forest; Tg, Pk; endemic.

194.9.2 **Pentace adenophora** Kosterm., **TFM2** 401; tree to 30 m tall; swampy lowland forest; Tg, Jh.

194.9.3 **Pentace corneri** Kosterm., **TFM2** 401; tree to 50 m tall; lowland forest; once from S.E. Jh.

194.9.4 **Pentace curtisii** King, **FMP1** 296, **TFM2** 401; tree to 40 m tall; hill forest; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl.

194.9.5 **Pentace excelsa** Kochummen, **TFM2** 404; tree to 60 m tall; lowland and hill forest; Gg Mandi Angin, Tg, Gg Tapis, Ph; endemic.

194.9.6 **Pentace eximia** King, **FMP1** 295, **TFM2** 404; tree to 30 m tall; coastal hills; Pn, Pk, Ph; endemic.

194.9.7 **Pentace floribunda** King, **FMP1** 295, **TFM2** 404; tree to 27 m tall; hill forest; Kl, Pk, Ph, Sl.

194.9.8 **Pentace grandiflora** Kochummen, **TFM2** 406; tree to 27 m tall; ridge-top forest; Tg; endemic.

194.9.9 **Pentace hirtula** Ridl., **FMP1** 295, **TFM2** 406; tree to 23 m tall; hill forest; Pn, Pk.

194.9.10 **Pentace macrophylla** King, **FMP1** 297, **TFM2** 406; tree to 40 m tall; lowland and hill forest; Tg, Pk, Sl, Jh.

194.9.11 **Pentace microlepidota** Kosterm., **TFM2** 407; tree to 60 m tall; lowland and hill forest; Kl, Pk, Ph, Sl; endemic.

194.9.12 **Pentace perakensis** King, **FMP1** 295, **TFM2** 401; *Pentace kunstleri* King, **FMP2** 296; small tree; lowland forest; Pk; endemic.

194.9.13 **Pentace strychnoidea** King, **FMP1** 296, **TFM2** 407; tree to 30 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, NS; endemic.

194.9.14 **Pentace triptera** Mast., **FMP1** 293, **TFM2** 407; tree to 45 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

194.9.15 **Pentace sp. A**, **TFM2** 407; tree to 36 m tall; once each from Tg and Sl; ?endemic.

194.9.16 **Pentace sp. B**, **TFM2** 408; tree to 24 m tall; lowland forest; once from Rompin, Ph; ?endemic.

194.10.1a **Schoutenia accrescens** (Mast.) C.H. Curtis ssp. **accrescens**, **TFM2** 409; *Scoutenia mastersii* King, **FMP1** 298; tree to 33 m tall; lowland to montane forest; common and widespread.

194.10.1b **Schoutenia accrescens** (Mast.) C.H. Curtis ssp. **borneensis** Roekm., **TFM2** 410; tree; lowland forest; Ulu Endau, Jh.

194.10.2 **Schoutenia corneri** Roekm., **TFM2** 410; tree to 15 m tall; lowlands near streams; Ps, Jh; endemic.

194.10.3 **Schoutenia furfuracea** Kochummen, **TFM2** 410; tree to 10 m tall; lowland forest; only known from type, Ulu Sg Anak Endau, Jh; endemic.

194.10.4 **Schoutenia glomerata** King, **FMP1** 298, **TFM2** 410; tree to 15 m tall; along lowland streams; Kl, Tg, Ph.

194.10.5 **Schoutenia kunstleri** King, **FMP1** 298, **TFM2** 410; tree to 15 m tall; lowland forest; Pn, Tg, Pk, Ph, Jh; endemic.

194.10.6 **Schoutenia leprosula** L.G. Saw, **W30** 272; tree to 6 m tall; river banks in lowland forest; Endau Rompin area of Ph and Jh; endemic.

194.11.1 **Trichospermum javanicum** Blume, **TFM2** 412, **P16** 49; *Trichospermum kurzii* King, **FMP1** 307; *Trichospermum cymbiforme* Sprague *ex* Ridl., **FMP1** 308; tree to 30 m tall; lowland and hill forest, often in clearings; Pn, Kl, Pk, Ph, Sl, Jh.

194.12.1 **Triumfetta grandidens** Hance, **FMP1** 304, **P16** 40; prostrate shrublet; sandy shores; East Coast.

194.12.2 **Triumfetta pilosa** Roth, **FMP1** 304, **P16** 46; herb to 1.5 m tall; open sandy places; Pk, Ph.

194.12.3 **Triumfetta repens** (Blume) Merr. & Rolfe, **P16** 48; *Triumfetta subpalmata* Sol. *ex* Hemsl., **FMP1** 304; prostrate shrub; sandy shores; East Coast.

194.12.4 **Triumfetta rhomboidea** Jacq., **FMP1** 303, **L25** 174; *Triumfetta bartramia* L., *nom. illeg.*, **P16** 49; shrubby herb; common weed of waste ground; widespread.

194.12.5 **Triumfetta tomentosa** Bojer, **L25** 175; *Triumfetta pseudocana* Sprague & Craib, **FMP1** 304; shrub to 1 m tall; waste ground; widely scattered.

195. TRIGONIACEAE

195.1.1 **Trigoniastrum hypoleucum** Miq., **FMP1** 142, **FM14** 59, **TFM1** 449; tree to 30 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

196. TURNERACEAE

196.1.1 **Turnera subulata** Sm., **FMI4** 236; *Turnera trioniflora* Sims, **FMP1** 838; herb to 80 cm tall; damp waste ground; widespread; naturalized from tropical America.

196.1.2 **Turnera ulmifolia** L., **FMP1** 838, **FMI4** 237; herb to 1.5 m tall; open sandy places; widespread; naturalized from tropical America.

197. ULMACEAE

197.1.1 **Celtis philippensis** Blanco, **TFM2** 416, **FMI8** 62; *Celtis collinsae* Craib, **FMP3** 322; shrub or small tree to 10 m tall; on limestone; Ps, P. Langkawi, Kd, Kl, Ph.

197.1.2 **Celtis rigescens** (Miq.) Planch., **TFM2** 416, **FMI8** 58; tree to 40 m tall; lowland and hill forest; Pk, Ph, Sl.

197.2.1 **Gironniera hirta** Ridl., **FMP3** 321, **TFM2** 417, **FMI8** 74; tree to 20 m tall; lowland forest; Kl, Ph, Jh, Sp.

197.2.2 **Gironniera nervosa** Planch., **FMP3** 320, **TFM2** 419, **FMI8** 74; tree to 35 m tall, usually smaller; lowland forest below 500 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

197.2.3 **Gironniera parvifolia** Planch., **FMP3** 321, **TFM2** 419, **FMI8** 75; tree to 20 m tall; lowland and hill forest to 900 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

197.2.4 **Gironniera subaequalis** Planch., **FMP3** 320, **TFM2** 419, **FMI8** 75; tree to 38 m tall; lowland and hill forest to 1100 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

197.3.1 **Trema angustifolia** (Planch.) Blume, **FMP3** 319, **TFM2** 421, **FMI8** 54; small shrubby tree; roadsides and forest margins to 1200 m; Kd, Pn, Pk, Ph, Sl, NS, Ml.

197.3.2 **Trema cannabina** Lour., **TFM2** 421, **FMI8** 50; *Trema virgata* Blume, **FMP3** 319; shrub or small tree to 10 m tall; secondary forest to 1000 m; throughout.

197.3.3 **Trema orientalis** (L.) Blume, **TFM2** 421, **FMI8** 51; tree to 27 m tall; lowlands and hills; Main Range and near Kuala Lumpur.

197.3.4 **Trema tomentosa** (Roxb.) Hara, **TFM2** 423, **FMI8** 53; *Trema amboinensis* Blume, **FMP3** 319; shrub or tree to 15 m tall; lowland forest margins, waste places; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

198. UMBELLIFERAE.

198.1.1 **Centella asiatica** (L.) Urb., **FMi4** 117, **M47** 48; *Hydrocotyle asiatica* L., **FMP1** 869; low slender, long-creeping herb; damp grassy places; throughout.

198.2.1 **Eryngium foetidum** L., **FMP1** 870, **FMi4** 126; spiny foetid herb to about 60 cm tall; sandy waste ground, roadsides; widespread; naturalized from tropical America.

198.3.1 **Hydrocotyle javanica** Thunb., **FMP1** 869, **FMi4** 115; creeping herb ascending to 50 cm; damp clearings in lowland to montane forest; Pk, Ph.

198.3.2 **Hydrocotyle sibthorpioides** Lam., **FMi4** 115, **M47** 50; *Hydrocotyle rotundifolia* DC., **FMP1** 870; slender creeping herb; weed of short grass; Sp.

198.4.1 **Oenanthe javanica** (Blume) DC., **FMi4** 136; *Oenanthe stolonifera* (Roxb.) DC., **FMP1** 871; herb to 1 m tall; pool margins, swamps; Pk.

198.5.1 **Sanicula europea** L., **FMP1** 871, **FMi4** 125; herb to 75 cm tall; montane forest; Cameron Highlands, Ph.

199. URTICACEAE

199.1.1 **Boehmeria clidemioides** Miq., **Y01** 8; *Boehmeria sidifolia* Wedd., **FMP3** 365; shrub to 1.5 m tall; montane forest; Ph.

199.1.2 **Boehmeria glomerulifera** Miq., **Y01** 6; shrub to 1 m tall; once on P. Tioman, Ph.

199.1.3 **Boehmeria lanceolata** Ridl., **FMP3** 365; shrub; sandy places; Temengoh, Pk; ?endemic.

199.1.4 **Boehmeria malabarica** Wedd., **Y01** 5; shrub to 4 m tall; forest near streams.

199.1.5 **Boehmeria nivea** (L.) Gaudich., **C15** 165, **K09** 67; shrub; quite common on limestone, waste ground elsewhere; ramie of commerce; naturalized.

199.2.1 **Debregeasia longifolia** (Burm.*f.*) Wedd., **TFM4** 474; small tree to 7 m; mountains above 1300 m; Ph; possibly recent escape.

199.2.2 **Debregeasia squamata** King *ex* Hook.*f.*, **FMP3** 368, **C15** 165, **TFM4** 474; shrub to 4 m; lowlands to 500 m, mostly on limestone; Kl, Pk, Sl.

199.3.1 **Dendrocnide sinuata** (Blume) Chew, **C07** 36, **C15** 165, **TFM4** 475; *Laportea pustulosa* Ridl., **FMP3** 360; stinging tree to 10 m tall; on limestone; Pk.

199.3.2 **Dendrocnide stimulans** (L.*f.*) Chew, **C07** 11, **TFM4** 475; *Laportea stimulans* (L.*f.*) Miq., **FMP3** 359; small tree to 7 m, with irritant hairs; Pn, Sl.

199.4.1 **Elatostema acuminatum** (Poir.) Brongn., **FMP3** 364, **Y02** 492; herb to 30 cm; near mountain streams.

199.4.2 **Elatostema curtisii** (Ridl.) H. Schröt., **S12** 35; *Pellionia curtisii* Ridl., **FMP3** 362; shrubby herb to 30 cm tall; on rocks near mountain streams; Pk, Sl; endemic.

199.4.3 **Elatostema garrettii** Yahara, **Y02** 496; herb to 50 cm; forest on limestone; Pk, Ph.

199.4.4 **Elatostema inaequilobum** Ridl., **FMP3** 364; succulent creeping herb to 30 cm tall; montane forest; Sl.

199.4.5a **Elatostema latifolium** (Blume) H. Schröt. var. **acaule** (Hook.*f.*) H. Schröt. '*acaulis*', **S12** 20; *Pellionia javanica* (Wedd.) Wedd. var. *acaulis* (Hook.*f.*) Ridl., **FMP3** 362; small herb; Pn, Pk.

199.4.5b **Elatostema latifolium** (Blume) H. Schröt. var. **latifolium**, **S12** 17; *Procris latifolia* Blume, **FMP3** 365; *Pellionia javanica* (Wedd.) Wedd., **FMP3** 362; *Pellionia helferiana* Wedd., **FMP3** 361; *Pellionia latifolia* (Blume) Boerl., **Y02** 484; herb; hill forest; Pn, Kl, Pk, Ph, Sl, Jh.

199.4.6 **Elatostema molle** Wedd., **FMP3** 364, **Y02** 494; herb to 50 cm tall; on rocks in unshaded streams; Pn, Pk, Ph.

199.4.7 **Elatostema platyphyllum** Wedd., **FMP3** 363; herb to 30 cm tall; lowlands; Pn, Kl, Sl.

199.4.8 **Elatostema repens** (Lour.) Hallier *f.* var. **pulchrum** (N.E. Br.) H. Schröt., **S12** 25; *Pellionia repens* (Lour.) Merr., **Y02** 485; *Pellionia daveauana* N.E. Br., **FMP3** 362 incl. var. *viridis* N.E.Br.; creeping herb; lowland forest; Kd, Kl, Pk, Ph, Sl, NS.

199.4.9 **Elatostema sessile** J.R. Forst. & G. Forst., **FMP3** 363; herb to 30 cm tall; on rocks in streams; widespread.

199.4.10 **Elatostema subscabrum** H. Schröt., **S12** 85, **K49** 33; herb to 20 cm tall; on limestone; Ph; endemic.

199.5.1 **Laportea interrupta** (L.) Chew, **C08** 145, **TFM4** 473; *Fleurya interrupta* (L.) Wight, **FMP3** 359; herbaceous weed to 2 m tall; waste ground; widespread.

199.6.1 **Nothocnide mollissima** (Blume) Chew, **C09** 365, **TFM4** 473; *Pipturus mollissimus* (Blume) Wedd., **FMP3** 367; scrambling shrub; lowland and hill forest; Kd, Pn, Pk, Sl, Jh.

199.7.1 **Oreocnide rubescens** (Blume) Miq., **G21** 132; *Villebrunea sylvatica* Blume, **FMP3** 367; *Villebrunea rubescens* (Blume) Blume, **TFM4** 478; tree to 15 m; hill forests to 900 m; Pk, Ph, Sl, NS, Ml.

199.8.1 **Pilea fruticosa** Hook.*f.*, **FMP3** 360, **C15** 166; *Pilea calcarea* Ridl., **FMP3** 361; herb to 1 m tall; shady places on limestone; north of Malaya; endemic.

199.8.2 **Pilea microphylla** (L.) Liebm., **K09** 67; *Pilea muscosa* Lindl., **FMP3** 361; herb to 20 cm; weed in damp shady places; naturalized from South America.

199.9.1 **Pipturus argenteus** (G. Forst.) Wedd., **TFM4** 476; shrub or small tree to 10 m; lowlands; Kd, Pn, Ph, Jh, Sp.

199.10.1 **Pouzolzia hirta** (Blume) Hassk., **C12** 88, **G21** 130; *Pouzolzia bennettiana* Wight, **FMP3** 367; *Gonostegia hirta* (Blume) Miq., **TFM4** 472; erect herb; Ph.

199.10.2 **Pouzolzia sanguinea** (Blume) Merr., **B03** 47, **G21** 128; *Pouzolzia viminea* Wedd., **FMP3** 366; shrubby herb to 1.5 m tall; lowland and hill forest; widespread.

199.10.3 **Pouzolzia zeylanica** (L.) Benn., **G21** 130; *Pouzolzia indica* (L.) Gaudich., **FMP3** 366; herb to 40 cm tall; damp waste ground; widespread.

199.11.1 **Procris frutescens** Blume, **S11** 272; shrub to 3 m tall; lowland and hill forest including limestone; Kl, Pk, Ph, Sl.

199.11.2 **Procris pedunculata** (J.R. Forst. & G. Forst.) Wedd., **S11** 259; *Procris laevigata* Blume, **FMP3** 364; shrub to 2 m tall; lowland and hill forest; Kd, Pn, Ph, Sl.

200. VERBENACEAE

200.1.1 **Callicarpa angustifolia** King & Gamble, **FMP2** 616, **TFM3** 301, **C15** 168; shrub to 2 m tall; dry craggy limestone; Pk, Sl.

200.1.2 **Callicarpa candicans** (Burm.*f.*) Hochr., **TFM3** 301; *Callicarpa cana* L., **FMP2** 616; shrub; open country, forest margins; widespread.

200.1.3 **Callicarpa furfuracea** Ridl., **FMP2** 615, **TFM3** 301; shrub; Gg Senyum, Ph; endemic.

200.1.4 **Callicarpa longifolia** Lam., **FMP2** 616, **TFM3** 301; straggling shrub to 5 m tall; open country; widespread.

200.1.5 **Callicarpa maingayi** King & Gamble, **FMP2** 615, **TFM3** 302; tree to 18 m tall; lowland and hill forest to 1000 m; widespread; endemic.

200.1.6 **Callicarpa pentandra** Roxb.; *Geunsia pentandra* (Roxb.) Merr., **TFM3** 305; *Geunsia farinosa* Blume, **FMP2** 614; tree to 18 m tall; open country and forest margins; widespread.

200.1.7 **Callicarpa rubella** Lindl., **TFM3** 302; shrub 2 m tall; mountains at 1400 m; Cameron Highlands, Ph.

200.1.8 **Callicarpa tomentosa** (L.) Murr., **M51** 299; *Callicarpa arborea* Roxb., **FMP2** 614, **TFM3** 301; tree to 18 m tall; lowland forest; mostly in the north.

200.2.1 **Clerodendrum breviflorum** Ridl., **FMP2** 628, **TFM3** 305; small ant-inhabited shrub; swampy lowland forest; Pk, Sl, Jh; endemic.

200.2.2 **Clerodendrum deflexum** Wall., **FMP2** 624 incl. var. *bracteatum* Ridl., **TFM3** 304; shrub about 1 m tall; lowland to lower montane forest at 1300 m; throughout.

200.2.3 **Clerodendrum hendersonii** Moldenke, **K31** 259; shrub to 4 m tall; montane forest above 1200 m; Cameron Highlands and Gg Ulu Kali, Ph; endemic.

200.2.4 **Clerodendrum hispidum** M.R. Hend., **H35** 118, **TFM3** 304; shrub to 1.5 m tall; Tg, Ph; endemic.

200.2.5 **Clerodendrum indicum** (L.) Kuntze, **TFM3** 304; *Clerodendrum siphonanthus* R. Br., **FMP2** 628; shrub to 1 m tall; damp grassy places, waste ground; Kd, Pk, Ph.

200.2.6 **Clerodendrum inerme** (L.) Gaertn., **FMP2** 624, **TFM3** 304; scandent shrub; sandy and muddy shores; common on all coasts.

200.2.7 **Clerodendrum laevifolium** Blume, **TFM3** 305; *Clerodendrum dispariifolium* Blume, **FMP2** 625; spindly shrub or small tree; lowland forests and forest margins; common throughout.

200.2.8 **Clerodendrum langkawiense** King & Gamble, **FMP2** 625, **TFM3** 304; shrub under 1 m tall; lowlands; P. Langkawi.

200.2.9 **Clerodendrum nutans** Jack, **TFM3** 304; *Clerodendrum penduliflorum* Wall., **FMP2** 626; small shrub; lowland forest, sometimes on limestone; Kd, Pn, Pk, Sl.

200.2.10 **Clerodendrum oblongifolium** Kochummen, **TFM3** 305; shrub to 1 m tall; lowland forest; once from near Kota Tinggi, Jh; endemic.

200.2.11 **Clerodendron paniculatum** L., **FMP2** 628, **TFM3** 304; shrub to 3 m tall; forests, waste ground, often planted; Kd, Pn, Pk, Ph, Sl, NS.

200.2.12 **Clerodendrum phyllomega** Steud. var. **myrmecophilum** (Ridl.) Moldenke, **TFM3** 304; *Clerodendrum myrmecophilum* Ridl., **FMP2** 627; little ant-inhabited shrub; wet lowland forest; Tg, Pk, Sl, Jh, Sp.

200.2.13 **Clerodendrum ridleyi** King & Gamble, **FMP2** 629, **TFM3** 305; shrub about 2 m tall; lowland forest; Pk, Sl; endemic.

200.2.14 **Clerodendrum serratum** (L.) Moon, **FMP2** 626, **TFM3** 304; bushy shrub; forest, open country; north of Malaya.

200.2.15 **Clerodendrum umbratile** King & Gamble, **FMP2** 626; small shrub; montane forest; Pk, Sl, Ml.

200.2.16 **Clerodendrum villosum** Blume, **FMP2** 627, **TFM3** 304; shrub to 2 m tall; waste ground, disturbed areas; common throughout.

200.3.1 **Congea forbesii** King & Gamble var. **ridleyana** Munir, **M60** 292; *Congea vestita* Griff., **FMP2** 640; large liana; lowland forest; Kd, Pn.

200.3.2 **Congea griffithiana** Munir, **M60** 285; scandent shrub; lowland forest, also cultivated; Kd.

200.4.1 **Glossocarya mollis** Wall., **C15** 168; scandent shrub; on limestone; once from P. Rabana, Ps.

200.4.2 **Glossocarya premnoides** Ridl., **FMP2** 636; shrub; open country; Besih Hangat, Ps; ?endemic.

200.5.1 **Gmelina asiatica** L., **FMP2** 622, **TFM3** 306; small spiny tree or shrub; waste ground; dubiously native.

200.5.2 **Gmelina elliptica** Sm., **TFM3** 306; *Gmelina villosa* Roxb., **FMP2** 623; thorny scrambling shrub to 8 m tall; open country near the sea; widespread.

200.6.1 **Lantana camara** L., **K09** 194; *Lantana aculeata* L., **FMP2** 612; shrub; waste places; widespread; naturalized from tropical America.

200.6.2 **Lantana indica** Roxb., **FMP2** 612; small shrub; waste ground; widespread; naturalized from India.

200.7.1 **Peronema canescens** Jack, **FMP2** 636, **TFM3** 306; tree to 18 m tall; open country, secondary forests; common throughout.

200.8.1 **Petraeovitex bambusetorum** King & Gamble, **FMP2** 637, **M58** 232; large woody climber; bamboo forest; once from Ulu Kerling, Pk.

200.8.2 **Petraeovitex membranacea** Merr. var. **malesiana** Munir, **M58** 231; slender liana; lowland forest; Sl, Ph.

200.8.3 **Petraeovitex scortechinii** King & Gamble, **FMP2** 637, **M58** 228; liana; lowland and hill forest; Pk, Sl, NS, ?Ml; ?endemic.

200.8.4 **Petraeovitex wolfei** J. Sinclair, **S25** 19, **M58** 229; liana; lowland forest; Kd, Kl, Tg; endemic.

200.9.1 **Phyla nodiflora** (L.) Greene, **TFM3** 298, **M47** 556; *Lippia nodiflora* (L.) Michx., **FMP2** 612; creeping herb; sandy places near the sea, waste ground; widespread.

200.10.1 **Premna cordifolia** Roxb., **FMP2** 621, **TFM3** 307; small shrub; lowlands; Ml northward; endemic.

200.10.2 **Premna derryana** King & Gamble, **FMP2** 618, **TFM3** 307; climber; hill forest; Taiping Hills, Pk; endemic.

200.10.3 **Premna divaricata** Wall. *ex* Schau., **FMP2** 619, **TFM3** 307; climbing shrub; thickets in open country; widespread.

200.10.4 **Premna foetida** Reinw. *ex* Blume, **FMP2** 619, **TFM3** 307; large shrub; damp lowland forest; Ps, Kd, Pk, Ml, Jh, Sp.

200.10.5 **Premna kunstleri** King & Gamble, **FMP2** 622, **TFM3** 307; large shrub or small tree; lowland forest; Pk.

200.10.6 **Premna parasitica** Blume, **TFM3** 307; *Premna trichostoma* Miq., **FMP2** 620; large climbing shrub; lowland forest; P. Langkawi, Pk, Ph, Ml, Jh, Sp.

200.10.7 **Premna perakensis** King & Gamble, **FMP2** 620, **TFM3** 307; climbing shrub; Pk; endemic.

200.10.8 **Premna punctulata** C.B. Clarke, **FMP2** 620, **TFM3** 307; scandent shrub; lowland forest; Ml, Sp; endemic.

200.10.9 **Premna pyramidata** Wall., **FMP2** 622, **C15** 169; tree to 15 m tall; lowland forest; P. Langkawi, Pk, Ph, Sl.

200.10.10 **Premna ridleyi** King & Gamble, **FMP2** 621, **TFM3** 307; climbing shrub; lowland forest; Pk, Sp; endemic.

200.10.11 **Premna rubens** (C.B. Clarke) Ridl., **FMP2** 618, **TFM3** 307; climber; lowland forest; Air Panas, Ml; endemic.

200.10.12 **Premna serratifolia** L., **N11** 262; *Premna littoralis* King & Gamble, **FMP2** 618; *Premna angustior* (C.B. Clarke) Ridl., **FMP2** 619; *Premna integrifolia* L. *nom. illeg.*, **FMP2** 619 incl. var. *minor* Ridl.; *Premna corymbosa* Rottl. & Willd., **TFM3** 308; sea shore creeper or small shrub; common on all coasts.

200.10.13 **Premna sterculifolia** King & Gamble, **FMP2** 621, **TFM3** 307; shrubby climber; lowland forest; near Taiping, Pk; endemic.

200.10.14 **Premna tomentosa** Willd., **TFM3** 307; tree to 18 m tall; open country; NS northward.

200.10.15 **Premna wrayi** King & Gamble, **FMP2** 621, **TFM3** 307; large climber; lowland forest; Tapah, Pk; endemic.

200.11.1a **Sphenodesme pentandra** Jack var. **pentandra**, **FMP2** 639, **M59** 357; climbing shrub; lowland forest margins; P. Langkawi, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

200.11.1b **Spenodesme pentandra** Jack var. **wallichiana** (Schauer) Munir, **M59** 360; climber; Ph.

200.11.2 **Sphenodesme racemosa** (Presl) Moldenke, **M59** 349; *Sphenodesme barbata* Schauer, **FMP2** 638; climbing shrub; lowland forest; Pn, Kl, Tg, Ph, NS, Ml, Jh.

200.11.3 **Sphenodesme triflora** Wight, **FMP2** 638, **M59** 367; climbing shrub; lowland and hill forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh.

200.12.1 **Stachytarpheta cayennensis** (Rich.) Vahl, **S23** 34; herb; waste ground; Sp; naturalized from Tropical America.

200.12.2 **Stachytarpheta indica** (L.) Vahl, **FMP2** 613, **M47** 558; herb to 1 m tall; sandy places near the sea; widespread; naturalized from tropical America.

200.12.3 **Stachytarpheta jamaicensis** (L.) Vahl, **FMP2** 613, **M47** 560; shrub to 1 m tall; waste places; widespread; naturalized from tropical America.

200.12.4 **Stachytarpheta mutabilis** (Jacq.) Vahl, **FMP2** 613; lax shrub; hill resorts; naturalized from tropical America.

200.13.1 **Teijsmanniodendron coriaceum** (C.B. Clarke) Kosterm., **TFM3** 308; *Vitex coriacea* C.B. Clarke, **FMP2** 632; tree to 27 m tall; lowland and hill forest to 700 m; Kd, Kl, Tg, Pk, Ph, Sl, Jh, Sp.

200.13.2 **Teijsmanniodendron hollrungii** (Warb.) Kosterm., **TFM3** 309; *Vitex clarkeana* King & Gamble, **FMP2** 632; small tree; lowland forest near streams; Pn, Pk, Ph, Jh.

200.13.3 **Teijsmanniodendron holophyllum** (Baker) Kosterm., **TFM3** 308; *Vitex holophylla* Baker, **FMP2** 631; tree to 28 m tall; lowland forest; Tg, Jh.

200.13.4 **Teijsmanniodendron pteropodum** (Miq.) Bakh., **TFM3** 309; *Vitex pteropoda* Miq., **FMP2** 633; *Vitex peralata* King, **FMP2** 634; tree to 24 m tall; lowland swamps; Kd, Pn, Tg, Pk, Ph, Jh, Sp.

200.13.5 **Teijsmanniodendron simplicifolium** Merr., **TFM3** 309; tree to 18 m tall; lowland forest; Tg, Pk, Ph.

200.13.6 **Teijsmanniodendron sinclairii** Kosterm., **TFM3** 309; tree to 5 m tall; lowland forest; once from Tg.

200.14.1 **Verbena bonariensis** L., **S53** 150, **Y08** 105, **T19** 126; herb; roadsides; Cameron Highlands & Genting Highlands, Ph; naturalized from South America.

200.15.1 **Vitex gamosepala** Griff., **FMP2** 635, **TFM3** 310; tree to 18 m tall; lowland and hill forest to 1200 m; throughout.

200.15.2 **Vitex glabrata** R.Br., **FMP2** 634, **TFM3** 310; large tree; Pn, Kd.

200.15.3 **Vitex longisepala** King & Gamble, **FMP2** 634, **TFM3** 311; tree; mainly montane forest; Pn to Ml; endemic.

200.15.4 **Vitex negundo** L., **FMP2** 631, **TFM3** 311; shrub; usually near the coast, also cultivated; widespread.

200.15.5 **Vitex pinnata** L., **TFM3** 311; *Vitex pubescens* Vahl, *nom. illeg.*, **FMP2** 632; tree to 24 m tall; disturbed forest; throughout.

200.15.6 **Vitex quinata** (Lour.) F.N. Williams, **TFM3** 311; *Vitex heterophylla* Roxb., **FMP2** 633; tree to 36 m tall; lowland forest; middle Malaya.

200.15.7 **Vitex siamica** F.N. Williams, **FMP2** 632, **TFM3** 311, **C15** 169; tree to 10 m tall; craggy limestone hill summits; P. Langkawi, Pk, Sl.

200.15.8 **Vitex trifolia** L., **FMP2** 630, **TFM3** 311; shrub to 2.5 m tall; sandy shores, widely cultivated; widespread.

200.15.9 **Vitex urceolata** C.B. Clarke, **FMP2** 633, **TFM3** 313; tree to 18 m tall; lowland forest; Pk, NS, Ml; endemic.

200.15.10 **Vitex vestita** Wall. *ex* Schau., **FMP2** 635, **TFM3** 313; small tree; lowland forest; widespread.

201. VIOLACEAE

201.1.1 **Rinorea anguifera** (Lour.) Kuntze, **FMı7** 183, **TFM3** 315; *Alsodeia capillata* King, **FMP1** 133; *Alsodeia comosa* King, **FMP1** 133; *Alsodeia echinocarpa* Korth., **FMP1** 315; tree to 10 m tall; lowland and hill forest to 600 m; throughout.

201.1.2 **Rinorea bengalensis** (Wall.) Kuntze, **FMı7** 184, **TFM3** 317; *Alsodeia wallichiana* Hook.*f.*, **FMP1** 128; *Alsodeia lankawiense* Ridl., **FMP1** 129; shrub to 3 m tall; lowland and hill forest to 600 m, common on limestone; Ps, Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

201.1.3 **Rinorea horneri** (Korth.) Kuntze, **FMı7** 185, **TFM3** 317; *Alsodeia hirtella* Ridl., **FMP1** 128; *Alsodeia kunstleriana* King, **FMP1** 128; shrub to 3 m tall; lowland forest; widespread.

201.1.4a **Rinorea javanica** (Blume) Kuntze var. **javanica**, **FMı7** 188, **TFM3** 317; *Alsodeia hookeriana* King, **FMP1** 130; tree to 10 m tall; lowland forest to 300 m; widespread.

201.1.4b **Rinorea javanica** (Blume) Kuntze var. **wrayi** (King) Ng, **TFM3** 318; *Alsodeia wrayi* King, **FMP1** 129; tree to 10 m tall; lowland forest; Pk, Jh; endemic variety.

201.1.5a **Rinorea lanceolata** (Wall.) Kuntze var. **floribunda** (King) Ng, **TFM3** 318; *Alsodeia floribunda* King, **FMP1** 132; tree to 23 m tall; lowland forest; Kd, Pk; endemic variety.

201.1.5b **Rinorea lanceolata** (Wall.) Kuntze var. **lanceolata**, **FMi7** 187, **TFM3** 318; *Alsodeia maingayi* Hook.*f.* & Thomson, **FMP1** 130; *Alsodeia lanceolata* (Wall.) Oudem., **FMP1** 131; *Alsodeia grandiflora* Ridl., **FMP1** 132; shrub to 3 m tall; lowland forest below 750 m; widespread, mostly in the south.

201.1.6 **Rinorea longiracemosa** (Kurz) Craib, **FMi7** 189, **TFM3** 318; *Alsodeia cinerea* King, **FMP1** 130 incl. var. *hirsutiflora* King; shrub to 5 m tall; lowland forest; Tg, Pk, Jh.

201.1.7 **Rinorea macrophylla** (Decne.) Kuntze, **FMi7** 190, **TFM3** 318; *Alsodeia dasycaula* Miq., **FMP1** 129; shrub to 5 m tall; lowland forest; Ps, Pk, Ph.

201.1.8 **Rinorea sclerocarpa** (Burgersd.) M. Jacobs, **FMi7** 186, **TFM3** 319; *Alsodeia pachycarpa* King, **FMP1** 131; *Alsodeia scortechinii* King, **FMP1** 131; *Alsodeia condensa* King, **FMP1** 132; tree to 13 m tall; lowland and hill forest; widespread.

201.1.9 **Rinorea virgata** (Thwaites) Kuntze, **FMi7** 190, **TFM3** 319; *Alsodeia minutiflora* Ridl., **FMP1** 131; shrub to 4 m tall; once from Ps.

201.2.1 **Viola curvistylis** Boissieu & Capit., **FMi7** 210, **TFM3** 321; *Viola serpens auct. non* Wall., **FMP1** 126 in part; creeping herb; openings in montane forest, 1000–1700 m; Cameron Highlands, Ph.

201.2.2 **Viola hederacea** Labill., **FMi7** 211, **TFM3** 321; creeping rhizomatous herb; clearings of montane forest; Cameron Highlands, Ph; possibly naturalized from Australasia.

201.2.3 **Viola inconspicua** Blume, **FMi7** 203, **TFM3** 321; herb; open grassy place at 750 m; once from Penang Hill.

201.2.4 **Viola sumatrana** Miq., **FMi7** 209, **TFM3** 321; *Viola serpens auct. non* Wall., **FMP1** 126 in part; stoloniferous herb; clearings in montane forest at 700–2000 m; Kl, Pk, Ph.

202. VISCACEAE

202.1.1 **Korthalsella dacrydii** (Ridl.) Danser, **D04** 124; *Arceuthobium dacrydii* Ridl., **FMP3** 163, **D03** 455; tiny leafless mistletoe to 10 cm tall; upper montane forest, only on *Dacrydium* in the Peninsula; Gg Tahan, Ph.

202.1.2 **Korthalsella japonica** (Thunb.) Engl., **FMP3** 163; *Korthalsella opuntia* (Thunb.) Merr., *nom. illeg.*, **D03** 453; tiny leafless mistletoe about 10 cm tall; mountain tops; Kd, Ml.

202.2.1 **Notothixos malayanus** Oliv., **FMP3** 165, **D03** 457, **B10** 10; delicate mistletoe; Pn.

202.3.1 **Viscum articulatum** Burm.*f.*, **FMP3** 165, **D03** 460, **D05** 280, **R05** 126; *Viscum dichotomum* (*non* Gilibert) D.Don, **FMP3** 164; *Viscum flexuosum* Gamble, **FMP3** 165; *Viscum nepalense* Spreng., **D05** 283; bushy 'leafless' mistletoe parasitic on other mistletoe species; lowlands; Kd, Tg, Pn, Pk, Ph, NS, Ml, Jh, Sp.

202.3.2 **Viscum ovalifolium** Wall. *ex* DC., **D05** 296; *Viscum orientale auctt. plur., non* Willd., **FMP3** 164, **D03** 466; bushy mistletoe; common; Kd, Pn, Pk, Ph, Sl, Ml, Sp.

202.3.3 **Viscum wrayi** Gamble, **FMP3** 164, **D03** 470, **D05** 297; bushy mistletoe; Kd, Pk, Jh.

203. VITACEAE

203.1.1 **Ampelocissus arachnoidea** (Hassk.) Planch., **L08** 86; *Vitis harmandi sensu* Ridl., **FMP1** 471; climber; once collected from Terutau Island.

203.1.2 **Ampelocissus ascendiflora** Latiff, **L08** 87; scandent shrub; forest margins; Ml; endemic.

203.1.3 **Ampelocissus cinnamomea** (Wall.) Planch., **L08** 88; *Vitis cinnamomea* Wall., **FMP1** 472; slender climber; lowland forest; widespread.

203.1.4 **Ampelocissus compositifolia** (Wall. *ex* Lawson) Planch., **L08** 89; *Vitis compositifolia* Wall. *ex* Lawson, **FMP1** 473; slender climber; lowland forest; Pn, Pk, Ml.

203.1.5 **Ampelocissus elegans** (Kurz) Gagnep., **L08** 89; *Vitis elegans* Kurz, **FMP1** 473; slender climber; forest understorey and edges; lowlands, including limestone, to mountains; widespread.

203.1.6 **Ampelocissus floccosa** (Ridl.) Galet, **L08** 87; *Vitis floccosa* Ridl., **FMP1** 472; climber; hill forest; once from Gg Pulai, Jh; ?endemic.

203.1.7 **Ampelocissus gracilis** (Wall.) Planch., **L08** 86; *Vitis gracilis* Wall., **FMP1** 472; slender climber; forest fringes; widespread.

203.1.8 **Ampelocissus martini** Planch., **L08** 85; *Vitis martini* (Planch.) Hort. *ex* Ridl., **FMP1** 471; scandent vine; on limestone hills; Ps, Kd.

203.1.9 **Ampelocissus nitida** (Lawson) Planch., **L08** 91; *Vitis polystachya auct. non* Wall., **FMP1** 473 in part; climber; known only from Penang Hill; ?endemic.

203.1.10 **Ampelocissus polystachya** (Wall.) Planch., **L08** 91; *Vitis polystachya* Wall., **FMP1** 473 in part; climber; lowland forest; widespread.

203.1.11 **Ampelocissus thyrsiflora** (Blume) Planch., **L08** 90; *Vitis polystachya auct. non* Wall., **FMP1** 473 in part; slender climber; lowland and hill forests; widespread.

203.2.1 **Ampelopsis cantoniensis** (Hook. & Arn.) Planch., **L08** 83; *Vitis cantoniensis* (Hook. & Arn.) Seem., **FMP1** 476; climber; roadsides and waste ground; widespread.

203.3.1 **Cayratia japonica** (Thunb.) Gagnep., **L06** 136; *Vitis japonica* Thunb., **FMP1** 478; vine; lowland and hill forest margins, including on limestone.

203.3.2 **Cayratia mollissima** (Wall.) Gagnep., **L06** 136; *Vitis mollissima* Wall., **FMP1** 478; slender climber; lowland and hill forest.

203.3.3 **Cayratia novemfolia** (Wall. *ex* Lawson) Burkill *ex* A.W. Hill, **L06** 138; *Vitis novemfolia* Wall. *ex* Lawson, **FMP1** 479; wide-ranging forest climber.

203.3.4 **Cayratia trifolia** (L.) Domin, **L06** 135; *Vitis trifolia* L., **FMP1** 478; vine; forest fringes and wasteland.

203.3.5 **Cayratia wrayi** (King) Gagnep., **L06** 137; *Vitis wrayi* King, **FMP1** 475 in part; climber; hill and lower montane forest margins.

203.4.1 **Cissus adnata** Roxb., **L10** 205; vine; Ps and P. Tioman.

203.4.2 **Cissus aristolochioides** Planch., **L12** 31; climber; forest margins; Jeli, Kl.

203.4.3 **Cissus javana** DC., **L12** 34; *Cissus discolor* Blume, **L10** 205; *Vitis discolor* (Blume) Dalzell, **FMP1** 477; on limestone; Ps, P. Langkawi and Batu Caves, Sl.

203.4.4 **Cissus hastata** Miq., **L10** 202; *Vitis hastata* (Miq.) Miq., **FMP1** 477; slender climber; damp forest edges; widespread.

203.4.5 **Cissus nodosa** Blume, **L12** 33; *Cissus glaberrima* (Wall.) Planch., **L10** 202; *Vitis glaberrima* Wall., **FMP1** 477; climber, lowland forest, widespread but not common.

203.4.6 **Cissus repens** Lam., **L10** 203, **L12** 34; *Vitis repens* (Lam.) Wight & Arn., **FMP1** 477; *Cissus diffusa* (Miq.) Burkill *ex* A.W. Hill, **L10** 203; *Vitis diffusa* Miq., **FMP1** 477; slender climber; forest fringes.

203.4.7 **Cissus rostrata** (Miq.) Planch., **L10** 204; *Vitis rostrata* Miq., **FMP1** 476; vine; lowland and hill forest.

203.4.8 **Cissus simplex** Blanco, **L10** 206; *Vitis pyrrhodasys* (Miq.) Ridl., **FMP1** 477; vine; forest interior including swamps and limestone.

203.5.1 **Nothocissus spicifera** (Griff.) Latiff, **L07** 71; *Vitis macrostachya* Miq., **FMP1** 472; climber; lowland forest margins, often on river banks; Kd, Pn, Pk, Kl, Tg, Ph, Sl, Ml, Sp.

203.6.1 **Parthenocissus semicordata** (Wall.) Planch., **L08** 81; *Vitis semicordata* Wall., **FMP1** 475; climber; Pk.

203.7.1 **Pterisanthes cissoides** Blume, **FMP1** 482, **L09** 48; vine; lowland forest; Pk, Ph, Sl, Sp.

203.7.2 **Pterisanthes cordigera** (Griff.) Planch., **L09** 61; vine; lowland forest; Sl, NS, Ml, Jh.

203.7.3 **Pterisanthes dalhousiae** Planch., **FMP1** 481, **L09** 59; vine; Pn; endemic.

203.7.4 **Pterisanthes eriopoda** (Miq.) Planch., **FMP1** 481, **L09** 57; vine; lowland forest; Pk, Tg, Ph, Sl, NS, Ml, Jh, Sp.

203.7.5 **Pterisanthes glabra** Ridl., **FMP1** 481, **L09** 51; climber; only known from type; Sg Tahan, Ph; endemic.

203.7.6 **Pterisanthes heterantha** (Griff.) Lawson, **L09** 52; *Pterisanthes rufula auct. non* (Miq.) Planch., **FMP1** 482 in part; vine; NS, Ml, Jh.

203.7.7 **Pterisanthes miquelii** Planch., **L09** 56; vine; Pn.

203.7.8 **Pterisanthes pedata** Lawson, **FMP1** 482, **L09** 63; climber; Pk, Ml.

203.7.9 **Pterisanthes polita** (Miq.) Lawson, **L09** 53; *Pterisanthes coriacea* Korth. *ex* King, **FMP1** 480; vine; lowland forest; Pk, Ph, Sl, Jh, Sp.

203.7.10 **Pterisanthes pulchra** Ridl., **FMP1** 482, **L09** 58; vine with beautiful leaves; Ph; endemic.

203.7.11 **Pterisanthes rufula** (Miq.) Planch., **FMP1** 482 in part, **L09** 59; vine; Pk, Sl.

203.7.12 **Pterisanthes stonei** Latiff, **L09** 51; vine; lowland forest; NS, Jh; endemic.

203.8.1 **Tetrastigma cruciatum** Craib & Gagnep., **L11** 219; climber; lowland forest margins; Ps, Kd, Ml.

203.8.2 **Tetrastigma curtisii** (Ridl.) Suess., **L11** 223; *Vitis curtisii* Ridl., **FMP1** 474; liana; forest margins in lowlands and hills; Pn, Ph, Sl, NS; endemic.

203.8.3 **Tetrastigma dichotomum** (Blume) Planch., **L11** 221; climber; edges of hill and montane forest; Pk, Ph.

203.8.4 **Tetrastigma dubium** (Lawson) Planch., **L11** 219; *Vitis wrayi auct. non* King, **FMP1** 475 in part; climber; forest margins from lowlands to mountains; Kd, Pk, Pn, Kl, Sl, Jh.

203.8.5 **Tetrastigma godefroyanum** Planch., **L11** 224; liana; lowland forest; Kd, Sl.

203.8.6 **Tetrastigma hookeri** (Lawson) Planch., **L11** 223; climber; hill forest; P. Langkawi, Pn, Sl.

203.8.7 **Tetrastigma lawsoni** (King) Burkill *ex* A.W. Hill, **L11** 220; *Vitis lawsoni* King, **FMP1** 474; liana; lowland forest margins; Kd, Pk, Pn, Sl, Sp; endemic.

203.8.8 **Tetrastigma leucostaphylum** (Dennst.) Alston *ex* Mabb., **M02** 539; *Vitis kunstleri* King, **FMP1** 475; *Vitis lanceolarium* (Roxb.) Wall., **FMP1** 475; *Tetrastigma lanceolarium* (Roxb.) Planch., **L11** 222; stout climber; forest margins: lowlands, hills and limestone; Kd, Kl, Pk, Pn, Tg, Ph, Sl, NS, Jh, Sp.

203.8.9 **Tetrastigma papillosum** (Blume) Planch., **L11** 226; climber; hill and montane forest; Ph, Sl.

203.8.10 **Tetrastigma pedunculare** (Wall. *ex* Lawson) Planch., **L11** 225; *Vitis peduncularis* Wall. *ex* Lawson, **FMP1** 474; climber; lowland and hill forest; Kd, Pk, Kl, Ph, Sl, NS, Ml, Jh.

203.8.11 **Tetrastigma pyriforme** Gagnep., **L11** 226; climber; hill forest; Tg, Ph.

203.8.12 **Tetrastigma scortechinii** (King) Gagnep., **L11** 218; *Vitis scortechinii* King, **FMP1** 474; liana; lowland forest edges, including limestone; Pk, Ph; endemic.

204. ALISMATACEAE

204.1.1 **Echinodorus ridleyi** Steenis, **FMi5** 325; *Ranalisma rostrata* Stapf, **FMP4** 362; stoloniferous herb to 20 cm tall; muddy places in lowland forest; only known from Gua Batu, Sl (probably not on limestone).

204.2.1 **Sagittaria guayanensis** H.B.K. ssp. **lappula** (D. Don) Bogin, **FMP4** 363, **FMi5** 328, **M47** 30; submerged laticiferous herb with floating leaves; ditches and wet rice-fields; widespread.

205. AMARYLLIDACEAE

205.1.1 **Crinum asiaticum** L., **FMP4** 301, **FMi11** 359; *Crinum northianum* Baker, **FMP4** 301; *Crinum deflexum auct. non* Ker Gawl., **FMP4** 301; herb to 2 m tall; sandy places, coastal and riverine forest; widespread.

205.2.1 **Proiphys amboinensis** (L.) Herb., **FMi11** 366; *Eurycles sylvestris* Salisb. *ex* Schult., **FMP4** 303; bulbous herb to 30 cm tall; sandy and rocky places near the sea; north of Malaya.

206. ANTHERICACEAE

206.1.1 **Chlorophytum laxum** R.Br., **FMı9** 205; stemless herb to 60 cm tall; usually in shady places.

206.1.2 **Chlorophytum malayense** Ridl., **FMP5** 341, **FMı9** 206; *Chlorophytum orchidastrum auct. non* Lindl., **FMP4** 327; herb to 60 cm tall; lowland forest, including that on limestone; Ps, Pk.

207. ARACEAE

207.1.1 **Aglaodorum griffithii** (Schott) Schott, **N08** 61, **H28** 3; *Aglaonema griffithii* Schott, **FMP5** 100; creeping herb to 40 cm tall; in tidal swamps, often among nypah palms; Ml, Sp.

207.2.1 **Aglaonema costatum** N.E.Br., **FMP5** 100 incl. var. *immaculatum* Ridl., **N08** 23, **C15** 178, **H28** 4; creeping herb to 40 cm tall; on limestone rocks; P. Langkawi.

207.2.2 **Aglaonema nebulosum** N.E.Br., **N08** 30, **H28** 7; *Aglaonema pictum auct. non* Kunth, **FMP5** 102 incl. vars. *nanum* Ridl. and *scortechinii* (Hook.*f.*) Ridl.; erect herb 10–60 cm tall; peat and freshwater swamp forest, occasionally in the hills; widespread.

207.2.3 **Aglaonema nitidum** (Jack) Kunth, **N08** 33, **H28** 7; *Aglaonema oblongifolium* Schott, **FMP5** 100 incl. var. *curtisii* N.E.Br.; erect herb to 1 m tall; damp lowland forest; widespread.

207.2.4 **Aglaonema simplex** Blume, **N08** 39, **H28** 10; *Aglaonema schottianum* Miq., **FMP5** 101; *Aglaonema angustifolium* N.E.Br., **FMP5** 101 incl. var. *undulatum* Ridl.; erect herb to 120 cm tall; damp places in lowland forest; widespread.

207.3.1 **Alocasia beccarrii** Engl., **FMP5** 97, **H28** 12; creeping herb about 30 cm tall; on rocks in hill forest streams.

207.3.2 **Alocasia curtisii** N.E. Br., **H28** 13; herb; endemic.

207.3.3a **Alocasia denudata** Endl. var. **denudata**, **FMP5** 97, **H28** 14; herb to 1 m tall; forest margins; widespread.

207.3.3b **Alocasia denudata** Endl. var. **elongata** Engl., **H28** 14; herb; Sp; endemic variety.

207.3.4 **Alocasia longiloba** Miq., **H28** 16; *Alocasia eminens* N.E. Br.; herb.

207.3.5 **Alocasia lowii** Hook., **FMP5** 98, **H28** 16; herb to 1 m tall; on limestone.

207.3.6 **Alocasia macrorrhizos** (L.) G. Don. **N09** 58, **H28** 17; huge-leaved herb to 2 m tall; frequent escape or relic of cultivation; widespread.

207.3.7 **Alocasia ovalifolia** Ridl., **FMP5** 99, **H28** 18; herb to 75 cm tall; hill forest; widespread.

207.3.8 **Alocasia pubera** (Hassk.) Schott, **FMP5** 99, **H28** 19; herb to 60 cm tall; Pk.

207.4.1 **Amorphophallus bufo** Ridl., **FMP5** 93, **H28** 23; tuberous herb to 1.5 m tall; montane forests; endemic.

207.4.2 **Amorphophallus carneus** Ridl., **FMP5** 94 '*carnosus*', **C15** 179, **H28** 23; tuberous herb to 50 cm tall; on limestone; north of Peninsula; endemic.

207.4.3 **Amorphophallus elatus** Hook.*f*., **H28** 24; tuberous herb; endemic.

207.4.4 **Amorphophallus elegans** Ridl., **FMP5** 95, **H28** 24; tuberous herb to 1 m tall; montane forests; endemic.

207.4.5 **Amorphophallus haematospadix** Hook.*f*., **FMP5** 94, **C15** 179, **H28** 25; tuberous herb to 60 cm tall; on limestone; northern Malaya.

207.4.6 **Amorphophallus longituberosus** (Engl.) Engl. & Gehrm., **H28** 26; *Amorphophallus viridis* Ridl., **FMP5** 93; tuberous herb to 50 cm tall; [There must be some doubt as to whether this species occurs with Malaya. Ridley cites P. Adang (Thailand) as the only locality.].

207.4.7 **Amorphophallus malaccensis** Ridl., **H28** 26; tuberous herb; endemic.

207.4.8 **Amorphophallus minor** Ridl., **FMP5** 93, **H28** 27; tuberous herb to 30 cm tall; lowland forests; endemic.

207.4.9 **Amorphophallus paeoniifolius** (Dennst.) Nicolson, **N09** 37, **H28** 27; *Amorphophallus campanulatus* Decne., **FMP5** 92; tuberous herb to 2 m tall; open sites and forest margins.

207.4.10 **Amorphophallus perakensis** Engl., **FMP5** 94, **H28** 28; tuberous herb to 60 cm tall; endemic.

207.4.11 **Amorphophallus prainii** Hook.*f*., **FMP5** 94, **H28** 28; tuberous herb to 2 m tall; lowland forests.

207.4.12 **Amorphophallus sparsiflorus** Hook.*f*., **FMP5** 93, **H28** 30; montane forests; endemic.

207.4.13 **Amorphophallus variabilis** Blume, **FMP5** 95, **H28** 30; tuberous herb to 1.5 m tall; cracks in limestone; [Identity of this plant in Malaya may be incorrect].

207.5.1 **Amydrium humile** Schott, **FMP5** 118, **N07** 124, **H28** 31; creeping herb, sometimes climbing; on rocks and banks at 1200–1800 m; Pn, Pk, Ph.

207.5.2 **Amydrium medium** (Zoll. & Moritzi) Nicolson, **N07** 124, **H28** 31; *Epipremnopsis media* (Zoll. & Moritizi) Engl., **FMP5** 120; root climber; climbing boles of trees in lowland forest; widespread.

207.6.1 **Anadendrum latifolium** Hook.*f.*, **FMP5** 115, **H28** 32; epiphytic root climber to 2 m or more long; on tree trunks in lowland and hill forest; Kl, Tg, Pk, NS, Jh; endemic.

207.6.2 **Anadendrum marginatum** Schott, **FMP5** 116, **H28** 32; root climber; on trees and rocks in the lowlands and hills; Pk, Ph, Sl; endemic.

207.6.3a **Anadendrum montanum** (Blume) Schott var. **cordatum** Ridl., **FMP5** 116, **H28** 33; creeper; on rocks including limestone; Sl; endemic.

207.6.3b **Anadendrum montanum** (Blume) Schott var. **longirostre** Hook.*f.*, **FMP5** 116, **H28** 33; creeper.

207.6.3c **Anadendrum montanum** (Blume) Schott var. **montanum**, **FMP5** 115, **H28** 33; epiphytic root climber to 2 m or more long; on tree trunks in lowland forest, occasionally at higher altitudes; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

207.7.1 **Arisaema anomalum** Hemsl., **FMP5** 89, **H28** 35; tuberous herb to 50 cm tall; hill and montane forest; endemic.

207.7.2 **Arisaema filiforme** Blume, **FMP5** 89, **H28** 36; tuberous herb to 30–75 cm tall; montane forest.

207.7.3 **Arisaema fimbriatum** Mast., **FMP5** 89, **C15** 179, **H28** 36; tuberous herb to 30 cm tall; on limestone; in the north.

207.7.4 **Arisaema kunstleri** Hook.*f.*, **H28** 37; *Arisaema roxburghii* Kunth var. *kunstleri* (Hook.*f.*) Ridl., **FMP5** 88; tuberous herb to 30 cm tall; lowland and hill forest; endemic.

207.7.5 **Arisaema laminatum** Blume, **V12** 452, **H28** 37; *Arisaema roxburghii* Kunth, **FMP5** 88; tuberous herb to 30 cm tall; lowland and hill forest.

207.7.6 **Arisaema scortechinii** Hook.*f.*, **FMP5** 89, **H28** 38; tuberous herb to 30 cm tall; montane forests.

207.7.7 **Arisaema wrayi** Hemsl., **FMP5** 89, **H28** 38; herb to 50 cm tall; montane forest, also on limestone; endemic.

207.8.1 **Colocasia esculenta** (L.) Schott, **N09** 54, **H28** 45; *Colocasia antiquorum* Schott, **FMP5** 96; herb to 40 cm tall; relic of cultivation in damp open spots; origin obscure.

207.8.2 **Colocasia gigantea** (Blume) Hook.*f.*, **FMP5** 96, **H28** 45; herb to 2 m tall; forest margins, limestone rocks; widespread.

207.9.1 **Cryptocoryne affinis** N.E.Br., **FMP5** 87, **H28** 48; submerged herb; shallow gravelly forest streams; widespread; endemic.

207.9.2 **Cryptocoryne ciliata** (Roxb.) Schott, **FMP5** 86, **J02** 38, **H28** 49; stoloniferous tuberous herb; on tidal mud and in rivers and ditches near the sea; widespread.

207.9.3 **Cryptocoryne cordata** Griff., **FMP5** 86, **F21** 146 in part, **H28** 49; submerged herb; forest streams.

207.9.4 **Cryptocoryne decus-silvae** de Wit, **H28** 49; aquatic herb; endemic.

207.9.5 **Cryptocoryne elliptica** N.E.Br., **FMP5** 87, **H28** 50; aquatic herb; Pk; endemic.

207.9.6 **Cryptocornye griffithii** Schott. **FMP5** 87, **H28** 51; aquatic herb; slow forest streams; south of Peninsula; endemic.

207.9.7 **Cryptocoryne longicauda** Engl., **J02** 40, **H28** 52; *Cryptocoryne pontederiifolia auct. non* Schott, **FMP5** 87; *Cryptocoryne johorensis* Engl., **F21** 147; rhizomatous herb; forest streams and pools; base of Gg Pulai, Jh.

207.9.8 **Cryptocoryne minima** Ridl., **FMP5** 88, **H28** 52; rhizomatous herb; muddy places; Gua Batu Boh, Kl and Tapah, Pk.

207.9.9 **Cryptocoryne nurii** Furtado, **F21** 147, **H28** 52; aquatic herb; endemic.

207.9.10 **Cryptocoryne purpurea** Ridl., **FMP5** 87, **H28** 53; stoloniferous aquatic herb; slow forest streams; Kl, Jh; endemic.

Cryptocoryne schulzei de Wit [**H28** 54] and *Cryptocoryne zukalii* Rataj [**H28** 56] may also occur in Malaya.

207.10.1 **Cyrtosperma merkusii** (Hassk.) Schott, **H27** 430, **H28** 59; *Cyrtosperma lasioides* Griff., **FMP5** 127; herb to 4 m tall; open or shaded swampy places; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

207.11.1 **Epipremnum giganteum** (Roxb.) Schott, **FMP5** 110, **H28** 62; stout epiphytic root climber to 20 m long; on rocks and trees in the lowlands and hills; widespread.

207.11.2 **Epipremnum pinnatum** (L.) Engl., **N09** 32, **H28** 65; *Epipremnum mirabile* Schott, **FMP5** 119; large climber; lowland forests; (cv. Aureum is a frequent escape from cultivation).

207.12.1 **Furtadoa mixta** (Ridl.) M. Hotta, **H49** 53, H28 66; *Homalomena mixta* Ridl., **FMP5** 110, **F21** 209; herb; lowland forest; only known from the Gg Tahan area, Ph; endemic.

207.13.1 **Hapaline brownii** Hook.*f.*, **FMP5** 96, **C15** 180, **H28** 67, **B23** 72; tuberous herb to 30 cm tall; on limestone; P. Langkawi, Kd, Kl.

207.14.1a **Homalomena angustifolia** (Jack) Hook.*f.* var. **angustifolia**, **FMP5** 108, **H28** 70; *Homalomena humilis* (Jack) Hook.*f.* var. *pumila* (Hook.*f.*) Furtado, *nom. illeg.*, **F22** 203; creeping herb; on rocks in montane streams; widespread; endemic.

207.14.1b **Homalomena angustifolia** (Jack) Hook.*f.* var. **parvula** Ridl., **FMP5** 109, **H28** 70; creeping herb; Sg Teku, Gg Tahan, Ph; endemic.

207.14.2a **Homalomena argentea** Ridl. var. **argentea**, **FMP5** 107, **F22** 186, **H28** 70; herb; hills and mountains; Tg, NS, Ml.

207.14.2b **Homalomena argentea** Ridl. var. **purpurascens** Furtado, **F22** 188, **H28** 70; herb; among rocks in stream at 700 m; Gg Angsi, NS; endemic variety.

207.14.3 **Homalomena brevispatha** Engl., **H28** 72; herb.

207.14.4 **Homalomena confusa** Furtado, **F22** 189, **H28** 72; herb.

207.14.5 **Homalomena corneri** Furtado, **F22** 191, **H28** 73; creeping herb; on rocks above water; Sg Pelepa Kiri, Jh; endemic.

207.14.6 **Homalomena crassa** Ridl., **FMP5** 109, **H28** 73; fleshy herb; hill forest; Sl; endemic.

207.14.7 **Homalomena curtisii** Ridl., **FMP5** 108, **F22** 191, **H28** 73; erect herb; montane forest; endemic.

207.14.8 **Homalomena curvata** Engl., **H28** 74; herb; endemic.

207.14.9 **Homalomena deltoidea** Hook.*f.*, **FMP5** 105, **F22** 192, **H28** 74; erect herb about 30 cm tall; hill and montane forest; Kd, Pn, Pk, Sl, NS, Jh; endemic.

207.14.10 **Homalomena elliptica** Hook.*f.*, **FMP5** 108, **F22** 192, **H28** 74; creeping herb; lowlands and hills; Kd, Kl, Pn, Pk, Ph, Sl, NS, Ml.

207.14.11 **Homalomena falcata** Ridl., **FMP5** 107, **H28** 75; rhizomatous herb; on rocks in streams; Kd; endemic.

207.14.12a **Homalomena griffithii** (Schott) Hook.*f.* var. **griffithii**, **FMP5** 106, **F22** 194, **H28** 76; erect herb; lowland forest; widespread.

207.14.12b **Homalomena griffithii** (Schott) Hook.*f.* var. **obliquata** (Schott) Ridl., **H28** 76; *Homalomena obliquata* (Schott) Hook.*f.*, **FMP5** 107; rhizomatous herb; Pn.

207.14.12c **Homalomena griffithii** (Schott) Hook.*f.* var. **ovata** (Schott) Engl., **FMP5** 107, **H28** 76; herb; lowland forest; endemic variety.

207.14.13 **Homalomena hendersonii** Furtado, **F22** 198, **H28** 77; erect herb; Sg Menggiri, Kl; endemic.

207.14.14a **Homalomena humilis** (Jack) Hook.*f.* var. **humilis**, **FMP5** 105, **F22** 199, **H28** 77; erect herb about 15 cm tall; hill and montane forest; widespread.

207.14.14b **Homalomena humilis** (Jack) Hook.*f.* var. **ophirensis** (Ridl.) Furtado, **F22** 203, **H28** 78; *Homalomena angustifolia* (Jack) Hook.*f.* var. *ophirensis* Ridl., **FMP5** 109; long creeping herb; rocky places on mountains; Kd, Ml, Jh; endemic variety.

207.14.14c **Homalomena humilis** (Jack) Hook.*f.* var. **undulata** Ridl., **FMP5** 105, **F22** 207, **H28** 78; herb; lowlands, hills and mountains; Ph.

207.14.15 **Homalomena johorensis** Engl., **FMP5** 106 '*yohorensis*', **H28** 79; herb; Gg Panti, Jh; endemic.

207.14.16 **Homalomena kiahii** Furtado, **F22** 207, **H28** 79; erect herb about 30 cm tall; hills and swamps; Sg Kayu and Sg Pelepah Kiri, Jh; endemic.

207.14.17 **Homalomena kingii** Hook.*f.*, **H28** 79; herb.

207.14.18 **Homalomena lancifolia** Hook.*f.*, **FMP5** 109, **F22** 208, **H28** 80; creeping herb; hill and montane forest; Pk, Ph, Sl; endemic.

207.14.19 **Homalomena major** Griff., **H28** 81; herb; endemic.

207.14.20 **Homalonena minor** Griff., **H28** 81; herb; endemic.

207.14.21 **Homalomena montana** Furtado, **F22** 210, **H28** 82; herb; Endemic.

207.14.22 **Homalomena multinervia** Ridl., **FMP5** 109, **H28** 82; *Homalomena elliptica* Hook.*f.* var. *paucinervia* Furtado, **F22** 193; creeping herb; montane forest; endemic.

207.14.23 **Homalomena nutans** Hook.*f.*, **FMP5** 108, **F22** 211, **H28** 83; creeping herb; lowlands; Kl, Pk, Ph; endemic.

207.14.24 **Homalomena paludosa** Hook.*f.*, **FMP5** 104, **H28** 84; herb; wet lowland forest; widespread.

207.14.25 **Homalomena pendula** (Blume) Bakh.*f.*, **H28** 84; *Homalomena rubra* Hassk., **F22** 217; erect herb to 60 cm tall; lowland forest; Kl, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

207.14.26 **Homalomena pontederiifolia** Griff. *ex* Hook.*f.*, **H28** 85; *Homalomena coerulescens* Jungh. *ex* Miq. var. *pontederiifolia* (Griff. *ex* Hook.*f.*) Ridl., **FMP5** 104; herb; lowland forest; Ml, Sp; endemic.

207.14.27a **Homalomena pygmaea** (Hassk.) Engl. var. **latifolia** (Engl.) Engl., **H28** 86; herb.

207.14.27b **Homalomena pygmaea** (Hassk.) Engl. var. **pumila** (Hook.*f.*) Engl., **H28** 86; herb; endemic.

207.14.27c **Homalomena pygmaea** (Hassk.) Engl. var. **purpurascens** (Hook.*f.*) Engl., **H28** 86; *Homalomena purpurascens* (Schott) Hook.*f.*, **FMP5** 105 incl. var. *pumila* (Hook.*f.*) Ridl.; herb.

207.14.27d **Homalomena pygmaea** (Hassk.) Engl. var. **pygmaea**, **H28** 86; herb.

207.14.28 **Homalomena repens** Ridl., **FMP5** 106, **H28** 87; long creeping herb; on rocks; Gg Inas, Pk; endemic.

207.14.29 **Homalomena rostrata** Griff., **FMP5** 103, **F22** 225, **H28** 87; herb to 1 m tall; damp places in lowland forest; widespread; endemic.

207.14.30a **Homalomena sagittifolia** Jungh. *ex* Schott var. **angustifolia** Furtado, **F22** 228, **H28** 88; herb.

207.14.30b **Homalomena sagittifolia** Jungh. *ex* Schott var. **sagittifolia**, **FMP5** 103, **F22** 226, **H28** 88; herb to 1 m tall; lowland forest; Tg, Pk, Ph, Sl, NS, Jh, Sp.

207.14.31 **Homalomena scortechinii** Hook.*f.*, **FMP5** 109 in part, **F22** 213, **H28** 89; herb; forest; Kl, Pk, Ph, Sl, NS, Jh; endemic.

207.14.32 **Homalomena trapezifolia** Hook.*f.*, **FMP5** 107, **H28** 91; creeping herb; Pk, Ml; endemic.

207.14.33 **Homalomena undulatifolia** Ridl., **FMP5** 106, **H28** 91; small herb; lowland forest; Pk; endemic.

207.14.34 **Homalomena wallichii** Schott, **H28** 91; herb; endemic.

207.15.1 **Lasia spinosa** (L.) Thw., **H27** 459, **H28** 93; *Lasia aculeata* Lour., **FMP5** 125; clumping herb to 1.5 m tall; open wet places in the lowlands; Ps, Kd, Pn, Pk, Ph, Sl, Jh, Sp.

207.16.1 **Piptospatha elongata** (Engl.) N.E. Br., **H28** 96; herb.

207.16.2 **Piptospatha perakensis** (Engl.) Engl., **FMP5** 114, **H28** 97; herb to 50 cm tall; on rocks in flowing rivers and streams; widespread.

207.16.3a **Piptospatha ridleyi** N.E. Br. var. **lanceolata** Ridl., **FMP5** 114, **H28** 97; herb to 50 cm tall; on rocks in forest streams; Ulu Kahang, Jh; endemic.

207.16.3b **Piptospatha ridleyi** N.E. Br. var. **ridleyi**, **FMP5** 114, **H28** 97; herb to 50 cm tall; on rocks in forest streams; Sl, Jh; endemic.

207.17.1 **Pistia stratiotes** L., **FMP5** 85, **M47** 52, **H28** 98; stoloniferous floating herb; ponds, ditches and rivers; widespread; origin uncertain.

207.18.1 **Podolasia stipitata** N.E.Br., **FMP5** 125, **H27** 463, **H28** 99; rhizomatous herb; peaty sites in the lowlands and mountains; Kl, Pk, Jh.

207.19.1 **Pothos barberianus** Schott, **FMP5** 129 incl. var. **wallichii** (Hook.*f.*) Ridl., **H28** 100; *Pothos ellipticus* (*non* Moon *ex* Miq.) Ridl., **FMP5** 129; *Pothos ridleyanus* Furtado, **F21** 150; slender root climber; lowland forest; Pk, Ph.

207.19.2 **Pothos grandispathus** Ridl., **FMP5** 131, **H28** 103; root-climber; hill forest; Penang Hill; endemic.

207.19.3 **Pothos inaequalis** Ridl., **FMP5** 130, **H28** 103; slender root climber; river banks; Ph; endemic.

207.19.4 **Pothos junghuhnii** de Vriese, **H28** 104; climbing herb.

207.19.5 **Pothos kingii** Hook.*f.*, **FMP5** 131, **H28** 104; large root climber; montane forest; Taiping Hills, Pk; endemic.

207.19.6 **Pothos lancifolius** Hook.*f.*, **H28** 104; root climber.

207.19.7 **Pothos lorispatha** Ridl., **FMP5** 130, **C15** 181, **H28** 106; slender root climber; only known from Gua Batu, Sl; endemic.

207.19.8 **Pothos macrocephalus** Scort. *ex* Hook.*f.*, **FMP5** 128, **C15** 182, **H28** 106; slender root climber; rocks (including limestone) and trees in lowland forest; widespread.

207.19.9 **Pothos peninsularis** Alderw., **H28** 108; *Pothos latifolius* (*non* L.) Hook.*f.*, **FMP5** 129; slender root climber; trees in lowland and hill forest; widespread; endemic.

207.19.10 **Pothos rumphii** Schott, **F21** 150, **H28** 109; creeper; on rocks; P. Tioman. [the identity of this species seems unlikely given the East Malesian distribution of this species].

207.19.11 **Pothos salicifolius** Ridl., **FMP5** 130, **H28** 109; root-climber; montane forest; Fraser's Hill, Ph; endemic.

207.19.12 **Pothos scandens** L., **FMP5** 127, **N09** 25, **H28** 109; root climber; on trees and rocks including limestone; north of Peninsula.

207.20.1 **Rhaphidophora beccarii** (Engl.) Engl., **FMP5** 124, **H28** 112; short-creeping herb; on rocks in lowland streams, or low on tree trunks; Pk, Ph, Sl.

207.20.2 **Rhaphidophora burkilliana** Ridl., **FMP5** 121, **H28** 112; creeping herb; on rocks (?limestone); Batu Caves, Sl; endemic.

207.20.3 **Rhaphidophora caudata** (Roxb.) Schott, **H28** 113; herb; endemic.

207.20.4 **Rhaphidophora crassifolia** Hook.*f.*, **FMP5** 122, **H28** 113; large root-climber; lowland forest; Pk, Ph; endemic.

207.20.5 **Rhaphidophora foraminifera** (Engl.) Engl., **FMP5** 123, **H28** 115; stout climber; hill and montane forest; Pk.

207.20.6 **Rhaphidophora gracilipes** Hook.*f*., **FMP5** 121, **H28** 116; large climber; lowland forest; Pk; endemic.

207.20.7 **Rhaphidophora korthalsii** Schott, **FMP5** 124 incl. var. **angustiloba** Ridl. *ex* Engl. & K. Krause, **H28** 117; long climber; lowland and hill forest; widespread.

207.20.8 **Rhaphidophora kunstleri** Hook.*f*., **FMP5** 123, **C15** 183, **H28** 118; thick-stemmed root climber; on limestone; Pk; endemic.

207.20.9 **Rhaphidophora lobbii** Schott, **FMP5** 122, **H28** 119; long slender climber; on rocks and trees in lowland forest; Ml, Jh, Sp.

207.20.10 **Rhaphidophora maingayi** Hook.*f*., **FMP5** 123, **F21** 153, **H28** 119; root-climber; on rocks and trees in lowland forest; Pn, Sl, Ml, Sp.

207.20.11 **Rhaphidophora minor** Hook.*f*., **FMP5** 121, **H28** 119; slender climber; on trees along tidal rivers; Ph, Jh, Sp.

207.20.12 **Rhaphidophora pteropoda** (Teijsm. & Binn.) Engl., **FMP5** 123, **H28** 123; root-climber; lowland and hill forest; Pn, Pk, Sl.

207.20.13 **Rhaphidophora scortechinii** Hook.*f*., **FMP5** 122, **H28** 124; slender creeper; on rocks; Pk; endemic.

207.20.14 **Rhaphidophora tetrasperma** Hook.*f*., **FMP5** 124, **H28** 126; root climber; hill forest; Pk, Ph.

207.20.15 **Rhaphidophora wrayi** Hook.*f*., **FMP5** 122, **H28** 127; large woody root-climber; hill forest; Pn, Pk, Ph, Sl.

207.21.1 **Schismatoglottis brevicuspis** Hook.*f*., **FMP5** 113, **H28** 130; creeping herb; hill forest; widespread; endemic.

207.21.2 **Schismatoglottis brevipes** Hook.*f*., **H28** 130; *Schismatoglottis minor* Hook.*f*., **FMP5** 113; long-creeping herb; Pk.

207.21.3 **Schismatoglottis calyptrata** (Roxb.) Zoll. & Moritizi, **FMP5** 111 incl. vars *concolor* Hallier *f*. var. *picta auct. non* (Schott) Hallier *f*. and *ornata* Ridl. *ex* Engl., **H28** 130; *Schismatoglottis cordifolia* Ridl., **FMP5** 111, **H28** 130; herb to 60 cm tall; rocky places in lowland forest; widespread.

207.21.4 **Schismatoglottis longifolia** Ridl., **FMP5** 114, **H28** 138; herb to 1 m tall; hill forests; Pk; endemic.

207.21.5 **Schismatoglottis mutata** Scort. *ex* Hook.*f*., **FMP5** 111, **H28** 140; *Schismatoglottis linguiformis* Engl., **FMP5** 112, **H28** 138; *Schismatoglottis ridleyana* Engl., **FMP5** 112, **H28** 143; herb to 1 m tall; lowland and hill forest and limestone rocks; Pk, Ph, Sl; endemic.

207.21.6 **Schismatoglottis scortechinii** Hook.*f*., **FMP5** 113, **H28** 145; *Schismatoglottis marginata* (*non* Engl.) Ridl., **FMP5** 113, **H28** 139; *Schismatoglottis kingii* Engl., **H28** 136; herb to 30 cm tall; lowland and hill forest; Pk, Ph, Sl, Jh; endemic.

207.21.7 **Schismatoglottis wallichii** Hook.*f*., **FMP5** 112 incl. vars. *fasciata* Ridl. and *oblongata* Hook.*f*., **H28** 147; herb about 20 cm tall; lowland and hill forest; widespread.

207.22.1 **Scindapsus beccarrii** Engl., **FMP5** 116, **H28** 149; climber; on rocks above tidal rivers; Pn, Tg, Pk.

207.22.2 **Scindapsus hederaceus** Miq., **FMP5** 117, **H28** 151; climber to 10 m tall; on rocks and trees in the lowlands; widespread.

207.22.3 **Scindapsus perakensis** Hook.*f*., **FMP5** 118, **H28** 153; climber to 15 m; hill forest; Pk, Sl, Ml.

207.22.4 **Scindapsus pictus** Hassk., **FMP5** 117, **H28** 153; slender climber reaching canopy; lowland forests; widespread.

207.22.5 **Scindapsus rupestris** Ridl., **FMP5** 118, **H28** 154; climber; on rocks; Pk, Ml. [var. *siamensis* (Engl.) Engl. may occur in our area as well as var. *rupestris*].

207.22.6 **Scindapsus scortechinii** Hook.*f*., **FMP5** 117, **H28** 155; slender creeper; climbing over rocks and trees in hill forest; Kd, Pk, Ph, Sl.

207.22.7 **Scindapsus treubii** Engl., **H28** 155; creeping herb.

207.23.1 **Typhonium filiforme** Ridl., **FMP5** 91, **S35** 300, **H28** 158; tuberous herb to 20 cm tall; on limestone; Bt Lagi, Ps; Kuah, P. Langkawi; Kuala Dipang, Pk.

207.23.2 **Typhonium flagelliforme** (Lodd.) Blume, **N10** 489, **S35** 303, **H28** 158; *Typhonium cuspidatum* (Blume) Blume, **FMP5** 91 incl. var. *angustissimum* (Ridl.) Ridl.; tuberous herb to 20 cm tall; grassy places, waste ground; Pn, Ml, Sp.

207.23.3 **Typhonium fultum** Ridl., **FMP5** 91, **C15** 183, **S35** 304, **H28** 158; small herb to 10 cm tall; damp shady spots on limestone; P. Langkawi, Ph, Sl.

207.23.4 **Typhonium roxburghii** Schott, **FMP5** 90, **N10** 492, **S35** 305, **H28** 160; tuberous herb to 30 cm tall; open weedy places; Pn, Ml, Sp.

207.23.5 **Typhonium trilobatum** (L.) Schott, **FMP5** 90, **N10** 488, **S35** 306, **M47** 54, **H28** 160; tuberous herb to 40 cm tall; waste places; Ps, Kl, Pk, Ph, (Sp introduced).

208. ASPARAGACEAE

208.1.1 **Asparagus racemosus** Willd., **FMP4** 331, **FMi9** 216; scandent thorny shrub; on limestone; collected once on P. Langkawi.

209. BURMANNIACEAE

209.1.1 **Burmannia championii** Thwaites, **FMP4** 306, **FMi4** 17, **C15** 184; *Burmannia tuberosa* Becc., **FMP4** 306; small saprophytic herb; shady hollows in forest, including on limestone; widespread.

209.1.2 **Burmannia caelestis** Don, **FMP4** 304, **FMi4** 17; herb to 30 cm tall; grassy places; widespread.

209.1.3 **Burmannia disticha** L., **FMP4** 304, **FMi4** 16; herb to 75 cm tall; high mountains; widespread.

209.1.4 **Burmannia longifolia** Becc., **FMP4** 304, **FMi4** 16; herb 12–50 cm tall; damp places in montane forest; widespread.

209.1.5 **Burmannia lutescens** Becc., **FMi4** 19; *Burmannia gracilis* Ridl., **FMP4** 305; saprophytic herb to 23 cm tall.

209.1.6 **Burmannia oblonga** Ridl., **FMP4** 305, **FMi4** 18; saprophytic herb 7–15 cm tall; montane forest to 1300 m; Pn, Sl.

209.1.7 **Burmannia sphagnoides** Becc., **FMi4** 17; saprophytic herb 4–12 cm tall; forest.

209.1.8 **Burmannia wallichii** (Miers) Hook.*f.*, **FMP4** 305, **S75** 333; saprophytic herb; lowland forest; Sp.
Saunders has recently confirmed the occurrence of this species in Singapore, increasing the number of Malayan species of *Burmannia* to eight.

209.2.1 **Gymnosiphon aphyllus** Blume, **FMP4** 306, **FMi4** 20; achlorophyllous saprophytic herb to 17 cm tall; damp lowland forest; widespread.

209.3.1 **Thismia alba** Holttum *ex* Jonker, **FMi4** 23; saprophytic herb to 10 cm tall; Ph; endemic.

209.3.2 **Thismia arachnites** Ridl., **FMP4** 307, **FMi4** 24; saprophytic herb to 10 cm tall; hill forest; Pk, Ph; endemic.

209.3.3 **Thismia aseroe** Becc., **FMP4** 308, **FMi4** 23; saprophytic herb to 10 cm tall; lowland forest; Pk, Sp; endemic.

209.3.4 **Thismia chrysops** Ridl., **FMP4** 308, **FMi4** 22; saprophytic herb to 15 cm tall; on rotten logs in hill forest at 900 m; collected once on Gg Ledang, Ml; endemic.

209.3.5 **Thismia clavigera** (Becc.) F. Muell., **S69** 211, **S51** 420, **FMi9** 555; saprophytic herb to 10 cm tall; lowland secondary forest; once from the base of Gg Raya, P. Langkawi.

209.3.6 **Thismia fumida** Ridl., **FMP4** 307, **FMi4** 23; saprophytic herb to 10 cm tall; among dead leaves in dense forest; Sl, Sp; endemic.

209.3.7 **Thismia grandiflora** Ridl., **FMP4** 308, **FMi4** 22; saprophytic herb to 3 cm tall; once from Bt Tana Abang, Jh; endemic.

209.3.8 **Thismia racemosa** Ridl., **FMP4** 308, **FMi4** 22; tufted saprophytic herb about 5 cm tall; low ground near swamp; once from near Temerloh, Ph; endemic.

210. CANNACEAE

210.1.1 **Canna indica** L., **M01** 6; herb to 150 cm tall; waste places; common escape; naturalized.

211. COMMELINACEAE

211.1.1 **Amischotolype glabrata** Hassk.; **H24** 392; *Forrestia glabrata* (Hassk.) Hassk., **FMP4** 360; herb; montane forest.

211.1.2 **Amischotolype gracilis** (Ridl.) I.M. Turner, **T18** 53; *Forrestia gracilis* Ridl., **FMP4** 359; slender herb to 1 m tall; lowland forest; widespread.

211.1.3 **Amischotolype griffithii** (C.B. Clarke) I.M. Turner, **T24** 221; *Forrestia griffithii* C.B. Clarke, **FMP4** 360; herb to 1 m tall; lowland forest; widespread.

211.1.4 **Amischotolype irritans** (Ridl.) I.M. Turner, **T24** 221; *Forrestia irritans* Ridl., **FMP4** 361; herb with red spiny hairs; montane forest; Pk, Sl; ? Endemic.

211.1.5 **Amischotolype marginata** Hassk.; **H24** 392, **T18** 53; *Forrestia marginata* (Hassk.) Hassk., **FMP4** 360; creeping herb to 2 m long; wet rocky lowland forest; widespread.

211.1.6 **Amischotolype mollissima** (Blume) Hassk.; **H24** 392; *Forrestia mollis* Hassk., **FMP4** 360; herb; lowland and hill forest.

211.1.7 **Amischotolype monosperma** (C.B. Clarke) I.M. Turner, **T24** 221; *Forrestia monosperma* C.B. Clarke, **FMP4** 360; herb to over 1 m tall; damp rocky forest including on limestone; Kl, Ph; endemic.

211.2.1 **Belosynapsis ciliata** (Blume) R.S. Rao, **R06** 187; *Cyanotis capitata* (Blume) C.B. Clarke, **FMP4** 358; creeping herb; grassy forest margins; widespread.

211.3.1 **Commelina attenuata** J. König, **FMP4** 352; tufted creeping herb; sandy shores; Sp.

211.3.2 **Commelina benghalensis** L., **FMP4** 353, **M47** 128; creeping herb reaching 30 cm tall; common weed; widespread.

211.3.3 **Commelina caroliniana** Walter, **F04** 50; *Commelina hasskarlii* C.B. Clarke, **FMP4** 352; herb; Tg.

211.3.4 **Commelina clavata** C.B. Clarke, **FMP4** 353; creeping herb; damp open spots.

211.3.5 **Commelina diffusa** Burm.*f.*, **B04** 21, **M47** 130; *Commelina nudiflora auct. non* L., **FMP4** 350; slender long-creeping herb; common in grassy places; throughout.

211.3.6 **Commelina longifolia** Lam., **B04** 20; *Commelina salicifolia* Roxb., **FMP4** 353; slender herb; fallow rice-fields; Ps.

211.3.7 **Commelina paludosa** Blume, **R06** 181; *Commelina obliqua* (*non* Vahl) Buch.-Ham. *ex* D. Don, **FMP4** 354; herb about 30 cm tall; lowland and hill forest; widespread.

211.3.8 **Commelina sikkimensis** C.B. Clarke, **FMP4** 352; slender creeping herb; open places; north of Malaya.

211.3.9 **Commelina suffruticosa** Blume, **FMP4** 353; rhizomatous herb to 30 cm tall; Kl.

211.4.1 **Cyanotis axillaris** (L.) Sweet, **FMP4** 358, **F03** 295, **M47** 132; red-stemmed herb to 60 cm tall; rice-fields; Ps, Kl.

211.4.2 **Cyanotis cristata** (L.) D. Don, **FMP4** 358, **M47** 134; *Cyanotis barbata* D. Don, **FMP4** 358; tufted creeping herb to 30 cm tall; sandy or grassy spots; widespread.

211.5.1 **Dictyospermum conspicuum** (Blume) Hassk., **F05** 152; *Aneilema conspicuum* (Blume) Kunth, **FMP4** 357; erect herb to 50 cm tall; lowland forest; widespread.

211.5.2 **Dictyospermum ovatum** Hassk., **F05** 155; *Aneilema subovatum* Ridl., **FMP4** 357; creeping herb to 20 cm tall; Ps, P. Langkawi.

211.6.1 **Floscopa scandens** Lour., **FMP4** 359; creeping herb to 30 cm tall; common in muddy ditches; widespread.

211.7.1 **Murdannia clandestina** (Ridl.) Faden, **F05** 152; *Aneilema clandestinum* Ridl., **FMP4** 255; creeping herb about 30 cm long; swampy place; Temengoh, Pk; endemic.

211.7.2 **Murdannia gigantea** (Vahl) Brückner, **F05** 153; *Aneilema giganteum* (Vahl) R.Br., **FMP4** 356; herb to 60 cm tall; dry rocky and sandy spots; Ps, Kd, Jh.

211.7.3 **Murdannia japonica** (Thunb.) Faden, **F02** 142, **F05** 154; *Aneilema lineolatum* (Blume) Kunth, **FMP4** 354; herb to 60 cm tall; lowland forest; north of Malaya.

211.7.4 **Murdannia nudiflora** (L.) Brenan, **F05** 154; *Aneilema nudiflorum* (L.) Sweet, **FMP4** 355; slender creeping herb to about 30 cm long; weed of dry sandy ground; throughout.

211.7.5 **Murdannia vaginata** (L.) Brückner, **F05** 155; *Aneilema giganteum* (L.) Wall., **FMP4** 356; tufted herb to 25 cm tall; open sandy places; widespread.

211.7.6 **Murdannia wightii** R.S. Rao & Kammathy, **R06** 184; *Aneilema pauciflorum* (*non* Dalzell) Wight, **FMP4** 355; small herb; once from Kuah, P. Langkawi.

211.8.1 **Pollia secundiflora** (Blume) Backer, **B04** 17; *Pollia sorzogonensis* (E.Mey.) Steud., **FMP4** 351; herb to 1.5 m tall; lowland and hill forest; widespread.

211.8.2 **Pollia subumbellata** C.B. Clarke, **FMP4** 350, **C15** 185; slender herb to 1 m tall; on limestone; Ps, Kd, ?Ph.

211.8.3 **Pollia sumatrana** Hassk., **FMP4** 350; herb to 30 cm tall; lowland forest, including over limestone; Pk.

211.8.4 **Pollia thyrsiflora** (Blume) Steud., **FMP4** 350; herb to 60 cm tall; damp hill forest; Ph, Pk, Sl.

211.9.1 **Rhopalephora scaberrima** (Blume) Faden, **F01** 480; *Aneilema protensum* (Wight) Wall. *ex* C.B. Clarke, **FMP4** 357; herb to 60 cm tall; damp places in forest; Ph.

211.10.1 **Spatholirion ornatum** Ridl., **FMP4** 362; succulent herb; lowland forest; once from Pergau Dam, Kl.

211.11.1 **Tradescantia spathacea** Sw., **H56** 402; *Rhoeo spathacea* (Sw.) W.T. Stearn, **C15** 185; herb 30–60 cm tall; limestone cliff faces; Pk; naturalized from Central America.

212. CONVALLARIACEAE

212.1.1 **Disporum cantoniense** (Lour.) Merr., **FMi9** 218; *Disporum pullum* Salisb., **FMP4** 338; rhizomatous herb reaching 80 cm tall; hill forest; Pk, Ph.

212.2.1 **Ophiopogon caulescens** (Blume) Backer, **FMi9** 226; *Ophiopogon intermedius* D. Don var. *macranthus* Ridl., **FMP4** 327; *Ophiopogon malayanus* Ridl., **FMP4** 327; *Ophiopogon prolifera* Lindl., **FMP4** 327; grassy-leaved rhizomatous herb; montane forest; several locations but rare.

212.3.1a **Peliosanthes teta** Andrews ssp. **humilis** (Andrews) Jessop, **FMi9** 229; *Peliosanthes violacea* Wall. *ex* Baker, **FMP4** 324; *Peliosanthes albida* Baker, **FMP4** 325; *Peliosanthes lurida* Ridl., **FMP4** 325; *Peliosanthes monticola* Ridl., **FMP4** 325; *Peliosanthes viridis* Ridl., **FMP4** 325; *Peliosanthes grandifolia* Ridl., **FMP4** 326; *Peliosanthes parviflora* Ridl., **FMP4** 326; *Peliosanthes stellaris* Ridl., **FMP4** 326; stemless herb with short rhizome, about 50 cm tall; lowland and montane forest; throughout.

212.3.1b **Peliosanthes teta** Andrews ssp. **teta**, **FMi9** 228; *Peliosanthes teta* Andrews var. *angustifolia* Ridl., **FMP4** 323; stemless herb with short rhizome. about 50 cm tall; lowland and montane forest; P. Langkawi, Pn, Ph, Sl.

212.4.1 **Tricalistra ochracea** Ridl., **FMP4** 331, **FMi9** 221; stemless plant to 40 cm tall with woody rhizome; dense montane forest; known only from the Cameron Highlands, Ph; endemic monospecific genus.

212.5.1 **Tupistra grandis** Ridl., **FMP4** 330, **FMi9** 223; stemless herb to 50 cm tall; wet rocky places on limestone; P. Langkawi, Kl, Pk, Ph, Sl.

212.5.2 **Tupistra violacea** Ridl., **FMP4** 330, **FMi9** 221; stemless herb to 60 cm tall; hill and montane forest; Penang Hill and Gg Bujong Malacca, Pk; endemic.

213. COSTACEAE

213.1.1a **Costus globosus** Blume var. **kingii** (Baker.) Holttum, **H41** 244; *Costus kingii* Bak., **FMP4** 257; herb to more than 3 m tall; lowland forests; Pn, Pk, Ph, Sl; endemic variety.

213.1.1b **Costus globosus** Blume var. **ridleyi** (K. Schum.) Holttum, **H41** 244; *Costus globosus sensu* Ridl., **FMP4** 256; herb to more than 3 m tall; damp lowland forests; Pk, Ph, Sl, NS, Jh, Sp.

213.1.1c **Costus globosus** Blume var. **velutinus** (Ridl.) Holttum, **H41** 244; *Costus velutinus* Ridl., **FMP4** 257; herb to more than 3 m tall; damp lowland forests; Pk; endemic variety.

213.1.2 **Costus oligophyllus** K. Schum., **H41** 242; *Costus kunstleri* Ridl., **FMP4** 257; herb to 50 cm tall; hill forest; poorly known; Pk; endemic.

213.1.3 **Costus speciosus** (J. König) Sm., **FMP4** 256, **H41** 242 incl. var. *sericeus* (Blume) K. Schum.; herb 2–3 m tall; common at margins of lowland forests; widespread.

214. CYMODOCEACEAE

214.1.1 **Cymodocea rotundata** Ehrenb. & Hempr., **D24** 166; sea grass; NS, Sp.

214.1.2 **Cymodocea serrulata** (R.Br.) Asch. & Magnus, **D24** 171; sea grass; Jh, Sp.

214.2.1 **Halodule pinifolia** (Miki) Hartog, **D24** 158; sea grass; Sp.

214.2.2 **Halodule uninervis** (Forssk.) Asch., **D24** 147; sea grass; Sp.

214.3.1 **Syringodium isoetifolium** (Asch.) Dandy, **D24** 177; sea grass on muddy bottoms; Sp.

215. CYPERACEAE

215.1.1 **Actinoschoenus thouarsii** (Kunth) Benth., **FM17** 591 in synonymy; *Actinoschoenus filiformis* (Thwaites) Benth., **FMP5** 165; *Fimbristylis thouarsii* (Kunth) Merr., **FM17** 591; very densely tufted herb to 75 cm; sandy or rocky places usually below 500 m; Kd, Pn, Pk, Ph, Ml, Jh.

215.2.1 **Actinoscirpus grossus** (L.*f.*) Goetghebeur & D.A. Simpson, **G09** 171; *Scirpus grossus* L.*f.*, **FMP5** 162, **FM17** 498, **M47** 260; *Schoenoplectus grossus* (L.*f.*) Palla, **K66** 154; herb to 2 m tall; swamps, lake margins, to 850 m; widespread.

215.3.1 **Bulbostylis barbata** (Rottb.) C.B. Clarke, **FMP5** 160, **FM17** 539, **M47** 144; herb; sea shore; throughout Malaya.

215.3.2 **Bulbostylis puberula** (Poir.) C.B. Clarke, **FMP5** 160, **FM17** 540, **M47** 146; herb; sea shore; widespread.

215.4.1 **Carex baccans** Nees, **FMP5** 184, **FM19** 137; rhizomatous herb 60–150 cm tall; montane forest above 1000 m; Ph.

215.4.2 **Carex breviscapa** C.B. Clarke, **FM19** 148; *Carex curtisii* Ridl., **FMP5** 183; herb 5–20 cm tall; lowland and hill forest to 1250 m; Pn, Ph, NS.

215.4.3a **Carex cruciata** Wahlenb. var. **cruciata**, **FMP5** 185 incl. var. *condensata* Ridl., **FM19** 120; herb to 2 m; montane rain forest at 1100–1500 m; Pk, Ph.

215.4.3b **Carex cruciata** Wahlenb. var. **rafflesiana** (Boott) Noot., **FM19** 122; *Carex clarkeana* Kük., **FMP5** 183; herb; lowland and montane forest at 500–2400 m.

215.4.4 **Carex cryptostachys** Brongn., **FMP5** 181, **FMi9** 148; herb 10–50 cm tall; lowland rain forest usually at 350–1200 m; Pn, Pk, Ph, Jh, Sp.

215.4.5 **Carex filicina** Nees, **FMi9** 122; rhizomatous herb; wet open places in the mountains above 1300 m; Ph.

215.4.6 **Carex gracilispica** Hayata, **FMi9** 149; *Carex ligata auct. non* Boott, **FMP5** 181; herb 10–30 cm tall; montane forest near streams at 1700 m; Gg Tahan, Ph.

215.4.7 **Carex indica** L., **FMP5** 185 incl. vars. *laetebrunnea* C.B. Clarke and *fissilis* (Boott) Kük., **FMi9** 126; herb to 1 m tall; damp places in forest to 1000 m; Ph, Jh.

215.4.8 **Carex maculata** Boott, **FMi9** 157; open wet places in mountains; above 1600 m; Ph.

215.4.9 **Carex malaccensis** C.B. Clarke, **FMP5** 183, **C15** 187, **FMi9** 153; tufted herb to 60 cm; sea shore and on limestone inland; P. Langkawi; endemic.

215.4.10a **Carex perakensis** C.B. Clarke var. **borneensis** (C.B. Clarke) Noot., **FMi9** 141; *Carex breviglumis* Ridl., **FMP5** 183; herb 40–140 cm; montane forest; Ph.

215.4.10b **Carex perakensis** C.B. Clarke var. **perakensis**, **FMP5** 184, **FMi9** 140; *Carex arridens* C.B. Clarke, **FMP5** 184; *Carex rivulorum* (*non* Dunn) Ridl., **FMP5** 184; herb to almost 2 m tall; swampy places and lowland forest; Pk, Ph, Sl.

215.4.11 **Carex speciosa** Kunth, **C15** 187, **FMi9** 155; tufted herb to 50 cm tall; in sheltered crevices on limestone; Kl, Ph.

215.4.12 **Carex verticillata** Zoll. & Moritzi, **FMi9** 143; *Carex walkeri* Arn. *ex* Boott, **FMP5** 184; herb 25–100 cm tall; damp, open places in montane forest; Gg Kerbau, Pk.

215.5.1 **Cyperus babakan** Steud., **FMi7** 613, **M47** 150; *Cyperus babakensis* Steud. *ex* Miq., **FMP5** 144; herb to 90 cm tall; swamps, forest and rice fields up to 100 m; Kl, Pn, Pk, Ph, Sl, Ml.

215.5.2 **Cyperus castaneus** Willd., **FMP5** 141, **FMi7** 630; small herb to 15 cm; sandy localities to 300 m; Kl, Pk.

215.5.3 **Cyperus compactus** Retz., **FMi7** 638, **M47** 156; *Mariscus microcephalus* Presl, **FMP5** 149; *Mariscus compactus* (Retz.) Bold., **K70** 228; herb usually about 50 cm tall; swamps and other wet places up to 500 m; common near rivers and the sea.

215.5.4 **Cyperus compressus** L., **FMP5** 144, **FMi7** 617, **M47** 158; herb up to 50 cm tall; weed of cultivation, particularly paddy fields, to 700 m; common throughout Malaya.

215.5.5 **Cyperus cuspidatus** Kunth, **FMi7** 629; *Cyperus uncinatus auct. non* Poir., **FMP5** 141; small herb to 15 cm; weed of dry sandy places to 1100 m; throughout.

215.5.6 **Cyperus cyperinus** (Retz.) J.V. Suringar, **FMi7** 641; *Mariscus cyperinus* (Retz.) Vahl, **FMP5** 149, **K70** 233; herb to about 50 cm tall; waste ground to 1300 m; common throughout.

215.5.7 **Cyperus cyperoides** (L.) Kuntze, **FMi7** 642, **M47** 160; *Mariscus sieberianus* Nees *ex* C.B. Clarke, **FMP5** 148 incl. var. *evolutior* C.B. Clarke in part, and var. *subcomposita* C.B. Clarke; *Mariscus sumatrensis* (Retz.) J. Raynal, *basionym illeg.*, **K70** 232; *Mariscus macrocarpus* Kunth, **D41** 449; herb to 75 cm; waste grassy places, often a weed, to 1800 m; throughout.

215.5.8 **Cyperus difformis** L., **FMP5** 142, **FMi7** 629, **M47** 162; herb about 40 cm tall; weed of ricefields; Kl.

215.5.9 **Cyperus digitatus** Roxb., **FMi7** 601, **M47** 164; *Mariscus sieberianus* var. *evolutior auct. non* C.B. Clarke, **FMP5** 149 in part; herb to about 150 cm; wet places in the lowlands to 800 m.

215.5.10 **Cyperus distans** L.*f.*, **FMP5** 145, **FMi7** 610, **M47** 166; herb to about 50 cm; damp open places to 1800 m; common throughout.

215.5.11 **Cyperus dubius** Rottb., **FMi7** 643; *Mariscus dregeanus* Kunth, **FMP5** 148; *Mariscus dubius* (Rottb.) Kük., **K70** 237; small herb up to 50 cm; sandy beaches; all coasts.

215.5.12 **Cyperus elatus** L., **FMP5** 148, **FMi7** 601, **M47** 168; *Cyperus digitatus auct. non* Roxb., **FMP5** 147; *Cyperus radiatus auct. non* Vahl, **FMP5** 147 in part; herb about 100 cm tall; open wet places to 700 m.

215.5.13 **Cyperus exaltatus** Retz., **FMi7** 602; herb 100–180 cm tall; open wet places at low altitudes; Pn, Sp.

215.5.14a **Cyperus haspan** L. ssp. **haspan**, **FMi7** 625, **M47** 172; *Cyperus haspan* L., **FMP5** 142 in part; herb to 50 cm; wet places, frequent weed, to 1900 m; common throughout.

215.5.14b **Cyperus haspan** L. ssp. **juncoides** (Lam.) Kük., **FMi7** 625; *Cyperus haspan* L., **FMP5** 142 in part; herb to 100 cm; wet places to 1900 m; throughout.

215.5.15 **Cyperus imbricatus** Retz., **FMi7** 603, **M47** 174; *Cyperus radiatus* Vahl, **FMP5** 147 in part; herb to 100 cm tall; open wet places in the lowlands; scattered.

215.5.16 **Cyperus iria** L., **FMP5** 143, **FMi7** 616, **M47** 176; herb to about 50 cm; open wet places to 700 m; common throughout.

215.5.17 **Cyperus javanicus** Houtt., **FMi7** 635; *Mariscus albescens* Gaudich., **FMP5** 149; *Mariscus javanicus* [*non* (Moritzi) Kuntze] (Houtt.) Merr. & F.P. Metcalf, **K70** 227; herb to about 70 cm tall; mangrove, sea shore, occasionally inland; west coast of Peninsula.

215.5.18a **Cyperus laxus** Lam. var. **laxus**, **R10** 277; *Cyperus diffusus* Vahl, **FMP5** 142, **FMi7** 619; herb to about 80 cm; lowland forest and shady places to 700 m; throughout.

215.5.18b **Cyperus laxus** Lam. var. **macrostachyus** (Boeck.) Karth., **K02** 46; *Cyperus diffusus* Vahl var. *pubisquama* Hook.*f.*, **FMP5** 143; *Cyperus diffusus* Vahl var. *macrostachyus* Boeck., **FMi7** 619; herb; lowland forest to 700 m; throughout Malaya.

215.5.19 **Cyperus malaccensis** Lam., **FMP5** 147, **FMi7** 613, **M47** 180; herb to nearly 200 cm; mostly on tidal mud; common on all coasts.

215.5.20 **Cyperus odoratus** L., **FMi7** 645, **M47** 182; *Mariscus sieberianus* var. *evolutior auct. non* C.B. Clarke, **FMP5** 149 in part; herb to 100 cm tall; open wet places at low altitudes.

215.5.21 **Cyperus pilosus** Vahl, **FMP5** 144, **FMi7** 611, **M47** 184; herb to about 50 cm tall; common in open wet places to 1500 m; throughout.

215.5.22 **Cyperus platystylis** R.Br., **FMP5** 141, **FMi7** 618, **M47** 186; herb to 80 cm tall; very wet places in the lowlands.

215.5.23 **Cyperus procerus** Rottb., **FMP5** 147, **FMi7** 611, **M47** 190; *Pycreus puncticulatus auct. non* Nees, **FMP5** 140; herb to about 125 cm tall; open damp or wet places, often near the sea.

215.5.24 **Cyperus pulcherrimus** Willd. *ex* Kunth, **FMP5** 142, **FMi7** 624; tufted herb to 40 cm tall; damp spots and paddy fields to 750 m.

215.5.25 **Cyperus radians** Nees & Meyen, **FMP5** 143, **FMi7** 623; herb about 30 cm tall when flowering; sea shores; both coasts.

215.5.26 **Cyperus rotundus** L., **FMP5** 145, **FMi7** 604, **M47** 198; herb about 30 cm tall; open grassy places to 1000 m; common and widespread.

215.5.27 **Cyperus sphacelatus** Rottb., **FMi7** 609, **M47** 202; herb about 30 cm tall; grassy places; Pn, Jh, Sp; naturalized from ? Neotropics.

215.5.28 **Cyperus stoloniferus** Retz., **FMP5** 145, **FMi7** 606; creeping herb to 50 cm tall; sandy shores and tidal mud; common on both coasts.

215.5.29 **Cyperus tenuiculmis** Boeck., **FMi7** 608, **M47** 204; *Cyperus zollingeri auct. non* Steud., **FMP5** 144; herb to about 70 cm; open grassy places to 1600 m; common throughout.

215.5.30 **Cyperus tenuispica** Steud., **FMi7** 625, **M47** 206; herb to 40 cm tall; very wet, open places to 500 m.

215.5.31 **Cyperus trialatus** (Boeck.) Kern, **FMi7** 621; *Cyperus bancanus* Miq., **FMP5** 143; herb to 50 cm; open or lightly shaded places; Kd, Pn, Pk, Ph, Ml, Sp.

215.6.1 **Diplacrum caricinum** R.Br., **C36** 125; *Scleria caricina* (R.Br.) Benth., **FMP5** 178, **FMi7** 749; slender herb to 35 cm tall; open grassy places, wasteland to 1200 m; common throughout.

215.6.2 **Diplacrum reticulatum** Holttum; *Scleria reticulata* (Holttum) Kern, **FMi7** 751; slender herb to 35 cm tall; damp places in lallang patches; Ph.

215.7.1 **Eleocharis acutangula** (Roxb.) Schult., **FMi7** 525, **M47** 210; *Eleocharis fistulosa* Schult., **FMP5** 151; herb to 70 cm tall; open wet places to 800 m; Kd, Pk, Pk, Ml, Sp.

215.7.2 **Eleocharis congesta** D. Don, **FMi7** 532, **M47** 214; herb to 40 cm tall; in shallow water; Pn, Sl.

215.7.3 **Eleocharis dulcis** (Burm.*f.*) Hensch., **FMi7** 529, **M47** 216; *Eleocharis equisetina* Presl, **FMP5** 150; *Eleocharis plantaginea* (Retz.) Roem. & Schult., **FMP5** 150; herb to 200 cm tall; open wet places; the water chestnut.

215.7.4 **Eleocharis geniculata** (L.) Roem. & Schult., **FMi7** 536, **M47** 218; *Eleocharis capitata* R.Br., **FMP5** 151; herb to 40 cm; open wet places to 900 m; Tg, Pk, Ph, Jh, Sp.

215.7.5 **Eleocharis ochrostachys** Steud., **FMP5** 151, **FMi7** 528, **M47** 220; tufted herb to 60 cm tall; swamps, lake margins to 1400 m.

215.7.6 **Eleocharis philippinensis** Svenson, **FMi7** 526, **M47** 222; tufted herb to 60 cm tall; open marshy ground; Kd.

215.7.7 **Eleocharis retroflexa** (Poir.) Urb., **FMi7** 534, **M47** 224; *Eleocharis chaetaria* Roem. & Schult., **FMP5** 151; tufted herb to 20 cm tall; wet muddy places to 1600 m; common throughout Malaya.

215.7.8 **Eleocharis spiralis** (Rottb.) Roem. & Schult., **FMi7** 527; tufted herb to 60 cm tall; open wet places; Sp.

215.8.1 **Fimbristylis acuminata** Vahl, **FMP5** 153, **FMi7** 588, **M47** 226; *Fimbristylis acuminata auct. non* Benth., **FMP5** 153; herb to 30 cm tall; open wet muddy places; to 350 m.

215.8.2 **Fimbristylis alboviridis** C.B. Clarke, **FMi7** 580, **M47** 230; herb to 50 cm tall; dry grassy places; Kd, Sl.

215.8.3 **Fimbristylis argentea** (Rottb.) Vahl, **FMP5** 157, **FMi7** 586; small tufted herb to 10 cm; damp hollows near the sea; Kl, Tg.

215.8.4 **Fimbristylis calcicola** Kern, **FMı7** 572, **C15** 188; densely tufted herb to 20 cm; limestone screes; only known from type, P. Langkawi; endemic.

215.8.5 **Fimbristylis complanata** (Retz.) Link, **FMP5** 158, **FMı7** 548; herb to 90 cm; damp places to 1300 m; Pn, Ph, Ml, Sp.

215.8.6 **Fimbristylis cymosa** R.Br., **FMı7** 557; *Fimbristylis spathacea* Roth, **FMP5** 156; densely tufted herb to 50 cm; on muddy, sandy or rocky shores; common on both coasts.

215.8.7 **Fimbristylis dichotoma** (L.) Vahl, **FMı7** 575, **M47** 236; *Fimbristylis diphylla* (Retz.) Vahl, **FMP5** 155; herb to 75 cm; open grassy places to 1500 m; common throughout.

215.8.8 **Fimbristylis dura** (Zoll. & Moritzi) Merr., **FMı7** 554; *Fimbristylis asperrima* Boeck., **FMP5** 158 in part; herb to 75 cm tall; disturbed forest and forest margins to 1000 m.

215.8.9 **Fimbristylis eragrostis** (Nees) Hance, **FMı7** 567; *Fimbristylis nigrobrunnea* Thwaites, **FMP5** 159; herb to 75 cm; forest clearings; Kd, Tg.

215.8.10 **Fimbristylis ferruginea** (L.) Vahl, **FMP5** 156 incl. var. *arvensis* (Vahl) Ridl., **FMı7** 572; *Fimbristylis polytrichoides auct. non* R.Br., **FMP5** 154 in part; tufted herb to 80 cm; muddy wet places near the sea.

215.8.11 **Fimbristylis fulvescens** (Thwaites) Thwaites, **FMı7** 569; herb to 60 cm; at 750 m; collected twice on Penang Hill.

215.8.12 **Fimbristylis fusca** (Nees) C.B. Clarke, **FMP5** 160 in part, **FMı7** 567; *Fimbristylis rigidifolia* Ridl., **FMP5** 159; tufted herb to 50 cm; open grassy places; Kd, Kl, Sp.

215.8.13 **Fimbristylis fuscoides** C.B. Clarke, **FMP5** 160, **FMı7** 566; herb to 20 cm; open sandy places; Ps.

215.8.14 **Fimbristylis griffithii** Boeck., **FMı7** 584, **M47** 240; *Fimbristylis aestivalis auct. non* Vahl, **FMP5** 155; slender tufted herb to 20 cm tall; open wet places; Kl, Tg, Pk, Ph, Ml, Sp.

215.8.15 **Fimbristylis insignis** Thwaites, **FMı7** 555; *Fimbristylis longispica auct. non* Steud., **FMP5** 156; herb to 40 cm; open dry places; Kd.

215.8.16 **Fimbristylis leptoclada** Benth., **FMP5** 159, **FMı7** 560; herb to 65 cm; dry open places at low altitudes; Pn, Ph, Ml, Sp.

215.8.17 **Fimbristylis littoralis** Gaudich., **FMı7** 551; *Fimbristylis miliacea auctt. plur. non* (L.) Vahl, **FMP5** 158, **M47** 242; densely tufted herb to 60 cm tall; very wet open sites including rice-fields to 1000 m; common all over the Peninsula.

215.8.18 **Fimbristylis malayana** Ohwi, **FMi7** 571, **C15** 188; tufted herb to 40 cm; limestone screes at about 60 m; P. Langkawi; endemic.

215.8.19 **Fimbristylis nutans** (Retz.) Vahl, **FMP5** 154, **FMi7** 589; densely tufted herb about 40 cm tall; damp sandy spots; Kl, Tg, Ml, Jh, Sp.

215.8.20 **Fimbristylis obtusata** (C.B. Clarke) Ridl., **FMP5** 157, **FMi7** 559; small tufted herb to 15 cm tall; grassy places at low altitudes; P. Langkawi, Pn, Ph, Ml, Jh, Sp.

215.8.21 **Fimbristylis ovata** (Burm.*f.*) Kern, **FMi7** 565, **M47** 244; *Fimbristylis monostachyos* (L.) Hassk., **FMP5** 159 '*monostachya*'; densely tufted herb to 40 cm; dry grassy places; Ps, Kd, Sp.

215.8.22 **Fimbristylis pauciflora** R.Br., **FMP5** 154, **FMi7** 564; densely tufted herb to 30 cm tall; damp open or shaded sites to 800 m; widespread, not uncommon.

215.8.23 **Fimbristylis polytrichoides** (Retz.) R.Br., **FMP5** 154 in part, **FMi7** 586; herb to 30 cm tall; open wet places, usually near the sea; Kd, Pn, Pk, Ph, Sl.

215.8.24 **Fimbristylis schoenoides** (Retz.) Vahl, **FMP5** 154, **FMi7** 573, **M47** 246; densely tufted herb to 45 cm; open grassy places to 400 m.

215.8.25 **Fimbristylis sericea** R.Br., **FMP5** 157, **FMi7** 558; herb to 30 cm tall; sandy shores; east coast from Jh to Kl.

215.8.26 **Fimbristylis tetragona** R.Br., **FMP5** 153, **FMi7** 590; herb to 60 cm; open wet places at to 300 m; Ph, Sp.

215.8.27 **Fimbristylis thomsonii** Boeck., **FMi7** 548; *Fimbristylis asperrima auct. non* Boeck., **FMP5** 158 in part; herb to 80 cm tall; Kd.

215.8.28 **Fimbristylis tomentosa** Vahl, **FMi7** 576, **M47** 248; herb to about 40 cm tall; open grassy places; once from Ph.

215.8.29a **Fimbristylis trichophylla** Ridl. var. **erecta** Holttum *ex* Kern, **FMi7** 581; tufted herb to 60 cm; dry, unshaded cracks in limestone; Kd, Kl, Sl.

215.8.29b **Fimbristylis trichophylla** Ridl. var. **trichophylla**, **FMP5** 155, **FMi7** 580; slender tufted herb to 60 cm; dry, unshaded cracks in limestone; 60–240 m; P. Langkawi; endemic variety.

215.8.30 **Fimbristylis tristachya** R.Br., **FMi7** 573; *Fimbristylis podocarpa auct. non* Nees, **FMP5** 155; tufted herb about 60 cm tall; open grassy places; usually below 200 m; Ps, Kd, Sl, Sp.

215.8.31 **Fimbristylis umbellaris** (Lam.) Vahl, **C36** 150; *Fimbristylis globulosa* (Retz.) Kunth, **FMP5** 158, **FMi7** 551, **M47** 238; tufted herb to 120 cm tall; open wet places to 1000 m; common throughout.

215.9.1 **Fuirena ciliaris** (L.) Roxb., **FMi7** 519, **M47** 250; *Fuirena glomerata* Lam., **FMP5** 163; herb to about 40 cm tall; wet grassy places at low altitudes; Kd, Kl, Pn, Pk.

215.9.2 **Fuirena umbellata** Rottb., **FMP5** 162, **FMi7** 518, **M47** 252; herb to 110 cm; open wet places and margins of water bodies; whole Peninsula.

215.10.1 **Gahnia baniensis** Benl, **FMi7** 707; *Gahnia javanica* Zoll. & Moritzi *ex* Moritzi var. *penangensis* C.B. Clarke, **FMP5** 168; tall herb to 3 m; forming thickets on hills and low mountains; usually 900–2100 m; from Penang southwards.

215.10.2 **Gahnia javanica** Zoll. & Moritzi *ex* Moritzi, **FMi7** 708; *Gahnia castanea* Ridl., **FMP5** 169; herb to 120 cm tall; forming tussocks on mountain ridges; Pk, Ph.

215.10.3 **Gahnia tristis** Nees, **FMP5** 168, **FMi7** 710; herb to 100 cm tall; open dry spots to 1200 m; Kd to Sp.

215.11.1a **Hypolytrum nemorum** (Vahl) Spreng. var. **nemorum**, **FMi7** 491; *Hypolytrum latifolium* Rich., **FMP5** 170 incl. var. *penangense* C.B. Clarke; herb to 120 cm tall; in swampy places in forests to 1200 m; common throughout.

215.11.1b **Hypolytrum nemorum** (Vahl) Spreng. var. **proliferum** (Boeck.) Kern, **FMi7** 492; *Hypolytrum proliferum* Boeck., **FMP5** 170; herb to 60 cm tall; damp places in forests, lake margins, up to 800 m; Pn, Ph, Jh, Sp.

215.12.1 **Kyllinga brevifolia** Rottb., **FMP5** 138, **K70** 248; *Cyperus brevifolius* (Rottb.) Hassk., **FMi7** 656, **M47** 152; herb to 40 cm tall; damp grassy places to 1500 m; common throughout.

215.12.2a **Kyllinga melanosperma** Nees ssp. **melanosperma**, **FMP5** 138; *Cyperus melanospermus* (Nees) J.V. Suringar ssp. *melanospermus*, **FMi7** 656; herb up to 200 cm tall; open wet places at 500-2000 m.

215.12.2b **Kyllinga melanosperma** Nees ssp. **bifolia** (Miq.) Karth., **K02** 60; *Cyperus melanospermus* (Nees) J.V. Suringar ssp. *bifolius* (Miq.) Kern, **FMi7** 656; Herb; open wet places in mountains; Ph.

215.12.3 **Kyllinga nemoralis** (J.R. Forst. & G. Forst.) Dandy *ex* Hutch. & Dalziel, **K70** 249; *Kyllinga monocephala* Rottb., *nom. illeg.*, **FMP5** 138; *Cyperus kyllingia* Endl., **FMi7** 659, **M47** 178; creeping herb to about 50 cm tall; waste places in lowlands; very common throughout.

215.12.4 **Kyllinga polyphylla** Willd. *ex* Kunth, **K70** 247; *Cyperus aromaticus* (Ridl.) Mattf. & Kük., **FMi7** 656; herb; noxious weed of pasture; Sp; naturalized from East Africa.

215.13.1 **Lepidosperma chinense** Nees & Meyen. **FMP5** 167. **FMi7** 668: slender herb to 120 cm tall: open wet places in the mountains, usually above 1500 m: Kl. Tg. Pk. Ph. Ml. Jh.

215.14.1 **Lepironia articulata** (Retz.) Domin. **FMi7** 462: *Lepironia mucronata* Rich.. **FMP5** 175: herb to 150 cm tall: open wet places, mostly lowlands: Tg. Pk. Ph. Ml. Jh. Sp.

215.15.1 **Lipocarpha chinensis** (Osbeck) Kern. **FMi7** 521. **G10** 27. **M47** 254: *Lipocarpha argentea* (Vahl) R.Br. *ex* Nees. **FMP5** 163: herb to 50 cm tall: open wet places at low and medium altitudes: common throughout.

215.15.2 **Lipocarpha microcephala** (R.Br.) Kunth. **FMP5** 163. **FMi7** 522. **G10** 52: slender tufted herb to 30 cm: open sandy spots in the lowlands: Kl. Pn. Sp.

215.15.3 **Lipocarpha squarrosa** (L.) Goetghebeur. **G10** 71: *Scirpus squarrosus* L.. **FMi7** 516: tufted herb to 20 cm tall: open sandy places in the lowlands: Pn. Jh. Sp.

215.16.1 **Machaerina maingayi** (C.B. Clarke *ex* Ridl.) T. Koyama. **FMi7** 693: *Cladium maingayi* C.B. Clarke *ex* Ridl.. **FMP5** 167. tufted herb to 150 cm: open wet places in the mountains: 900–2100 m: Kl. Pk. Ph. Ml.

215.16.2 **Machaerina rubiginosa** (Spreng.) T. Koyama. **FMi7** 700: *Cladium glomeratum* R.Br.. **FMP5** 166: herb to 180 cm tall: swampy places near the sea: Sp.

215.17.1 **Mapania bancana** (Miq.) Benth. & Hook. *ex* B.D. Jacks.. **S22** 49: *Thoracostachyum bancanum* (Miq.) Kurz. **FMP5** 171. **FMi7** 465: herb to 80 cm: swamp forest: Pk. Ph. Sl. Ml. Jh. Sp.

215.17.2 **Mapania caudata** Kuk.. **S22** 120: *Mapania cuspidata* (Miq.) Uittien var. *pumila* (Uittien) Uittien. **FMi7** 475: small herb, lowland forest: Tg.

215.17.3a **Mapania cuspidata** (Miq.) Uittien var. **cuspidata**. **FMi7** 474. **S22** 112: *Mapania humilis* Fern.-Vill.. **FMP5** 174: *Mapania triquetra* Ridl.. **FMP5** 174: herb superficially like a dwarf pandan: primary lowland forest: Kl. Pk. Ph. Sl. Jh.

215.17.3b **Mapania cuspidata** (Miq.) Uittien var. **petiolata** (C.B. Clarke) Uittien. **FMi7** 474. **S22** 113: *Mapania humilis* Fern.-Vill. var. *petiolata* (C.B. Clarke) Ridl.. **FMP5** 174: herb like dwarf pandan: primary lowland forest: Pn. Pk. Ph. Sl. Ml. Jh. Sp.

215.17.4 **Mapania enodis** (Miq.) C.B. Clarke. **FMi7** 480. **S22** 81: *Mapania longa* Ridl. *ex* C.B. Clarke. **FMP5** 173: herb like small pandan, lowland swamp forest: Jh. Sp.

215.17.5 **Mapania holttumii** Kern, **FMı7** 472, **S22** 108; herb to 2 m tall; lowland and hill forest at 150–1200 m; Tg, Ph, Jh; Endemic.

215.17.6 **Mapania kurzii** C.B. Clarke, **FMP5** 172, **FMı7** 478, **S22** 73; *Mapania longispica* Ridl., **FMP5** 172; *Mapania valida* Ridl., **FMP5** 172 in part; large tufted herb; lowland and hill forests to 950 m; Kd, Pn, Pk, Sl, NS, Ml, Sp.

215.17.7 **Mapania lorea** Uittien, **FMı7** 480, **S22** 84; *Mapania valida* Ridl., **FMP5** 172 in part; *Mapania tenuiscapa auct. non* C.B. Clarke, **FMP5** 173 in part; large tufted herb; lowland swamp forest; Pn, Pk, Ph, Jh, Sp.

215.17.8 **Mapania meditensis** D.A. Simpson, **S22** 118; herb about 40 cm tall; swamp forest; collected once from Sg Kayu Ara, Jh.

215.17.9 **Mapania micropandanus** Holttum, **FMı7** 482, **S22** 97; stilt-rooted tufted herb; damp lowland forest; P. Tioman, Jh; endemic.

215.17.10 **Mapania monostachya** Uittien, **S22** 94; herb about 50 cm tall; lowland forest; collected once at Ulu Setiu F.R., Tg.

215.17.11a **Mapania palustris** (Hassk. *ex* Steud.) Fern.-Vill. var. **andamanica** (C.B. Clarke) D.A. Simpson, **S22** 69; large tufted herb; lowland forest; collected once at Ulu Sg Terenas, Kd.

215.17.11b **Mapania palustris** (Hassk. *ex* Steud.) Fern.-Vill. var. **palustris**, **FMP5** 172. **FMı7** 477, **S22** 67; *Mapania albescens* C.B. Clarke, **FMP5** 172; large tufted herb; damp forests to 1500 m; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

215.17.12 **Mapania sessilis** Merr., **S22** 97; herb about 1 m tall; swampy lowland forest; collected once at Sg Buloh F.R., Sl.

215.17.13 **Mapania squamata** (Kurz) C.B. Clarke, **FMı7** 479, **S22** 76; *Mapania wallichii auct. non* C.B. Clarke, **FMP5** 173 in part; large tufted herb; damp lowland and hill forest to 1500 m; Sl, NS, Jh, Sp.

215.17.14 **Mapania sumatrana** (Miq.) Benth. ssp. **pandanophylla** (F. Muell.) D.A. Simpson, **S22** 53; *Thoracostachyum hypolytroides* (F. Muell. *ex* Benth.) C.B. Clarke, **FMP5** 171; *Thoracostachyum sumatranum* (Miq.) Kurz, **FMı7** 464 in part; herb to 150 cm tall; swampy places in the lowlands; Ph, Ml, Jh.

215.17.15 **Mapania tenuiscapa** C.B. Clarke, **FMP5** 173 in part, **FMı7** 481, **S22** 86; large tufted herb; damp lowland forest; Kd, Pk, Ph, NS, Ml, Jh.

215.17.16 **Mapania wallichii** C.B. Clarke, **FMP5** 173 in part, **FMı7** 479, **S22** 78; large herb; damp lowland forest; Ph, Sp.

215.18.1 **Oreobolus kükenthalii** Steenis, **FMı7** 685, **S17** 153; *Schoenus distichus* Ridl., **FMP5** 166; herb forming cushions to 15 cm tall; mountain tops at 1600–2150 m; Gg Kerbau, Pk, and Gg Tahan, Ph.

215.19.1 **Paramapania parvibractea** (C.B. Clarke) Uittien, **FMi7** 486; *Hypolytrum radians* Ridl., **FMP5** 170 (Malayan specimens); herb forming compact three-angled clumps; lowland and lower montane forest to 1200 m; Kl, Jh.

215.20.1 **Pycreus polystachyos** (Rottb.) Beauv., **FMP5** 139 incl. var. *laxiflorus* (Benth.) C.B. Clarke; *Cyperus polystachyos* Rottb., **FMi7** 649 incl. var. *laxiflorus* Benth., **M47** 188; herb to about 60 cm; damp open places to 1800 m.

215.20.2 **Pycreus pumilus** (L.) Nees, **K70** 224; *Pycreus nitens* Nees, **FMP5** 140; *Cyperus pumilus* L., **FMi7** 650, **M47** 194; herb to 20 cm; open sandy places to 600m.

215.20.3a **Pycreus sanguinolentus** (Vahl) Nees ssp. **cyrtostachys** (Miq.) Karth., **K02** 66, **FMP5** 139 in part; *Cyperus sanguinolentus* Vahl ssp. *cyrtostachys* (Miq.) Kern, **FMi7** 647; herb to 60 cm; open wet places.

215.20.3b **Pycreus sanguinolentus** (Vahl) Nees ssp. **sanguinolentus**, **FMP5** 139 in part; *Cyperus sanguinolentus* Vahl ssp. *sanguinolentus*, **FMi7** 647; herb to 60 cm; open wet places.

215.20.4 **Pycreus substramineus** (Kük.) N.K. Khoi, **N04** 140; *Cyperus substramineus* Kük., **FMi7** 653; tufted herb to 35 cm tall; open grassy places; Kd, Pn .

215.21.1 **Remirea maritima** Aubl., **FMP5** 169; *Cyperus pedunculatus* (R.Br.) Kern, **FMi7** 644; *Mariscus pedunculatus* (R.Br.) T. Koyama, **K70** 240; creeping herb to 15 cm tall; sandy beaches; both coasts.

215.22.1 **Rhynchospora brownii** Roem. & Schult., **V08** 501; *Rhynchospora glauca* Vahl var. *chinensis* C.B. Clarke, **FMP5** 165; *Rhynchospora rugosa* (Vahl) Gale, **FMi7** 720; densely tufted herb to 75 cm tall; sandy places near the sea or mountain tops.

215.22.2 **Rhynchospora corymbosa** (L.) Britt., **FMi7** 713, **M47** 256; *Rhynchospora aurea* Vahl, **FMP5** 164; herb to 100 cm tall; open swampy places to 1200 m; common throughout.

215.22.3 **Rhynchospora hookeri** Boeck., **FMi7** 714; herb to 90 cm; dry fields; Ps.

215.22.4 **Rhynchospora malasica** C.B. Clarke, **FMP5** 164, **FMi7** 715; herb to 90 cm tall; lowland swamps; Tg, Ml, Jh, Sp.

215.22.5 **Rhynchospora rubra** (Lour.) Makino, **FMi7** 715; *Rhynchospora wallichiana* Kunth, **FMP5** 164; herb to 70 cm tall; open dry places; widespread.

215.22.6 **Rhynchospora submarginata** Kük., **FMi7** 718; *Rhynchospora wightiana auct. non* Steud., **FMP5** 164; herb to 40 cm tall; open dry places; P. Langkawi, Tg, Pn, Pk, Ph.

215.22.7 **Rhynchospora triflora** Vahl, **FMi7** 714; herb to 90 cm tall; swamps; Tasek Bera, Ph.

215.23.1 **Schoenoplectus juncoides** (Roxb.) Palla, **K68** 212, **K70** 160; *Scirpus erectus auct. non* Poir., **FMP5** 161; *Scirpus juncoides* Roxb., **FMi7** 512, **M47** 262; herb to 75 cm tall; open wet places to 1200 m; quite common, widespread.

215.23.2 **Schoenoplectus lateriflorus** (Gmel.) Lye, **L26** 290; *Scirpus supinus auct. non* L., **FMP5** 161; *Scirpus lateriflorus* Gmel., **FMi7** 514, **M47** 264; herb to 35 cm tall; open wet places, rice fields usually below 300 m; Kd, Kl, Tg, Pn.

215.23.3 **Schoenoplectus mucronatus** (L.) Palla, **K68** 214, **K70** 160; *Scirpus mucronatus* L., **FMP5** 161, **FMi7** 510, **M47** 266; herb to 2 m tall; ponds and ditches to 2000 m; common throughout.

215.23.4 **Schoenoplectus wallichii** (Nees) T. Koyama, **K68** 210; *Scirpus wallichii* Nees, **FMi7** 513; herb to 75 cm tall; open wet places; Kd, Ml.

215.24.1 **Schoenus calostachyus** (R.Br.) Poir., **FMP5** 166, **FMi7** 675; tufted herb to 75 cm tall; open sandy places; Kd, Tg, Ph, Sp.

215.24.2 **Schoenus falcatus** R.Br., **FMi7** 677; tufted herb to 90 cm; open grassy places; Ps.

215.25.1 **Scirpodendron ghaeri** (Gaertn.) Merr., **FMi7** 456; *Scirpodendron costatum* (Thwaites) Kurz, **FMP5** 175; pandan-like plants; tidal swamps and along rivers; common along both coasts.

215.26.1 **Scirpus subcapitatus** Thwaites, **FMi7** 505; *Scirpus clarkei* Stapf, **FMP5** 162; *Baeothryon subcapitatum* (Thwaites) T. Koyama, **K70** 166; herb to 75 cm; near mountain streams; Tg, Ph.

215.27.1a **Scleria biflora** Roxb. ssp. **biflora**, **FMi7** 744; *Scleria biflora* Roxb., **FMP5** 180; slender tufted herb to 45 cm; open grassy places up to 900 m; common.

215.27.1b **Scleria biflora** Roxb. ssp. **ferruginea** (Ohwi) Kern, **FMi7** 744; very slender herb to 1 m tall; once collected, Jh.

215.27.2 **Scleria carphiformis** Ridl., **FMP5** 180, **FMi7** 741; slender herb to 40 cm tall; open damp places on mountains; Kd, Tg, Ph.

215.27.3 **Scleria ciliaris** Nees, **FMi7** 734; *Scleria bancana* Miq., **FMP5** 178 incl. var. *nana* Ridl.; *Scleria chinensis* Kunth, **FMP5** 180; slender herb to 1 m tall; open places, forests, below 1000 m; widely distributed.

215.27.4 **Scleria corymbosa** Roxb., **FMP5** 176 in part, **FMi7** 740; *Scleria ridleyi* C.B. Clarke, **FMP5** 177; herb to 2 m tall; wet places, open or shaded, lowlands to 300 m; quite widespread.

215.27.5 **Scleria cyathophora** Holttum. **FMi7** 731; herb to 100 cm tall; shallow water; Tasek Bera, Ph.

215.27.6 **Scleria levis** Retz., **FMi7** 732; *Scleria hebecarpa* Nees, **FMP5** 179; slender herb to 90 cm tall; open country to 1500 m; whole Peninsula.

215.27.7a **Scleria lithosperma** (L.) Sw. var. **linearis** Benth., **FMi7** 741; *Scleria lithosperma* (L.) Sw. var. *roxburghii* C.B. Clarke, **FMP5** 176; herb to 60 cm tall; open places; Pk, Jh.

215.27.7b **Scleria lithosperma** (L.) Sw. var. **lithosperma**, **FMP5** 176, **FMi7** 741; herb to 60 cm tall; open places to 600 m; widespread.

215.27.8 **Scleria motleyi** C.B. Clarke, **FMi7** 729; *Scleria gonocarpa* Ridl., **FMP5** 177; herb to 100 cm tall; forests to 1200 m; uncommon.

215.27.9 **Scleria neesii** Kunth, **FMi7** 741; herb to 30 cm tall; damp spots in lowland heath; once collected, Bt Ketri, Ps.

215.27.10 **Scleria oblata** S.T. Blake, **FMi7** 733; *Scleria levis* (*non* Retz.) Willd., **FMP5** 177; herb to 100 cm tall; open damp places to 700 m; widespread.

215.27.11 **Scleria poaeformis** Retz., **FMi7** 736; *Scleria oryzoides* Presl, **FMP5** 177; herb to 2 m tall; lowland swamps; Ps, Kd, Pk, Tg, Ml, Jh, Sp.

215.27.12a **Scleria purpurascens** Steud. var. **ophirensis** (C.B. Clarke) Kern, **FMi7** 740; *Scleria multifoliata* Boeck. var. *ophirensis* C.B. Clarke, **FMP5** 179; herb; grassland on mountains to 1000 m; Kd, Jh.

215.27.12b **Scleria purpurascens** Steud. var. **purpurascens**, **FMi7** 739; *Scleria multifoliata* Boeck., **FMP5** 178 incl. var. *pilosula* C.B. Clarke; herb to 2 m tall; open places or in forest to 1000 m; tolerably common.

215.27.13 **Scleria rugosa** R.Br., **FMi7** 749; *Scleria zeylanica auct. non* Poir., **FMP5** 177; herb to 30 cm tall; open grassy places to 500 m; common widespread.

215.27.14 **Scleria scrobiculata** Nees & Meyen *ex* Nees, **FMi7** 738; large herb to 2.5 m tall; damp shady places; once collected, Jh.

215.27.15 **Scleria sumatrensis** Retz., **FMP5** 179, **FMi7** 736; tall slender herb to 4 m; swamps, dry open places or forest to 500 m; whole Peninsula.

215.27.16 **Scleria terrestris** (L.) Fassett, **FMi7** 733; *Scleria corymbosa auct. non* Roxb., **FMP5** 176; *Scleria radula* Hance, **FMP5** 178; *Scleria elata* Thwaites, **FMP5** 179 incl. var. *decolorans* C.B. Clarke; herb to several metres tall; forests, open wet places, lowlands to mountains; common throughout.

215.27.17 **Scleria thwaitesiana** Boeck., **FMi7** 748; herb to 50 cm tall; damp patches in open grassy ground; once collected at Bt Ketri, Ps.

215.28.1 **Tricostularia undulata** (Thwaites) Kern, **FMi7** 672; *Cladium undulatum* Thwaites, **FMP5** 167; *Cladium pulchrum* Ridl., **FMP5** 167; herb forming dense tussocks to 90 cm tall; open sandy places to 1600 m; Tg, Ph.

215.29.1 **Websteria confervoides** (Poir.) Hooper, **H50** 582; *Scirpus confervoides* Poir., **FMi7** 505; submerged aquatic herb; Tg, Ph.

216. DIOSCOREACEAE

216.1.1 **Dioscorea bulbifera** L., **FMP4** 315, **FMi4** 311; bulbiferous climber; waste ground; widespread.

216.1.2 **Dioscorea calcicola** Prain & Burkill, **FMP5** 341, **FMi4** 327, **C15** 189; slender climber; usually on limestone; P. Langkawi, Kd, Kl.

216.1.3 **Dioscorea esculenta** (Lour.) Burkill, **FMi4** 307; *Dioscorea aculeata* (*non* L.) L., **FMP4** 315; tuberous spiny-rooted climber; wild on limestone, but often cultivated also; Kd.

216.1.4 **Dioscorea filiformis** Blume, **FMi4** 329; *Dioscorea gibbiflora* Hook.*f*., **FMP4** 317; *Dioscorea myriantha* Kunth, **FMP4** 317; tuberous slender climber; lowlands including limestone; north of Malaya.

216.1.5 **Dioscorea glabra** Roxb., **FMP4** 318, **FMi4** 331; tuberous climber reaching 8 m; lowland forests; widespread.

216.1.6 **Dioscorea hispida** Dennst., **FMi4** 318; *Dioscorea triphylla* (*non* L.) L., **FMP4** 314; tuberous prickly climber; wild, also cultivated; widespread.

216.1.7 **Dioscorea kingii** Knuth, **FMP5** 341, **FMi4** 329; *Dioscorea porteri* Prain & Burkill *ex* Knuth, **FMP4** 318; tuberous woody climber to 20 m tall; lowland forest; Pn; endemic.

216.1.8 **Dioscorea lamprocaula** Prain & Burkill, **FMi4** 327; slender prickly woody climber; lowland and hill forest; Pk, Ph, Jh.

216.1.9 **Dioscorea laurifolia** Wall. *ex* Hook.*f*., **FMP4** 319, **FMi4** 323; tuberous wiry climber; forest margins, lowlands and hills; west of Main Range; Endemic.

216.1.10 **Dioscorea orbiculata** Hook.*f*., **FMP4** 317, **FMi4** 334; tuberous climber to 10 m tall; open country; widespread.

216.1.11 **Dioscorea pentaphylla** L., **FMP4** 314, **FMi4** 315; tuberous climber; sometimes cultivated; widespread.

216.1.12 **Dioscorea piscatorum** Prain & Burkill, **FMP4** 319, **FMi4** 310; tuberous climber to 10 or more metres tall; lowland forest; Pk, Ph, P. Tioman.

216.1.13 **Dioscorea polyclades** Hook.*f*., **FMP4** 315, **FMi4** 334; tuberous climber to 30 m tall; margins of lowland and hill forest, also on limestone; widespread.

216.1.14 **Dioscorea prainiana** Knuth, **FMi4** 324; tuberous climber reaching 16 m; lowland forest to 350 m, also on limestone; widespread.

216.1.15 **Dioscorea prazeri** Prain & Burkill, **FMi4** 304; rhizomatous climber reaching 4 m; on limestone; Ps.

216.1.16a **Dioscorea pyrifolia** Kunth var. **ferruginea** Prain & Burkill, **FMP4** 316, **FMi4** 333; tuberous climber to 10 m tall; hedges and thickets in the lowlands; widespread.

216.1.16b **Dioscorea pyrifolia** Kunth var. **pyrifolia**. **FMP4** 316, **FMi4** 332; tuberous climber to 10 m tall; hedges and thickets in the lowlands; widespread.

216.1.16c **Dioscorea pyrifolia** Kunth var. **subinermis** Prain & Burkill, **FMi4** 333; tuberous climber to 10 m tall; hedges and thickets in the lowlands; central Malaya.

216.1.17 **Dioscorea scortechinii** Prain & Burkill, **FMP4** 314, **FMi4** 318; thorny tuberous climber; lowland forest; Pk southward.

216.1.18 **Dioscorea stenomeriflora** Prain & Burkill, **FMP4** 319, **FMi4** 306; *Peripetasma polyanthum* Ridl.; **FMP1** 103; slender woody climber reaching 25 m; lowland forest margins; Pk southward.

216.1.19 **Dioscorea tamarisciflora** Prain & Burkill, **FMP4** 314, **FMi4** 314; slender tuberous climber; rare and local.

216.1.20 **Dioscorea tenuifolia** Ridl., **FMi4** 326; *Dioscorea zollingeriana* (*non* Kunth) Miq., **FMP4** 317; slender tuberous climber to 16 m tall; lowland forest; Sp.

216.2.1 **Stenomeris borneensis** Oliv., **FMP4** 313, **FMi4** 297; slender climber reaching 5 m; damp spots; rare.

217. DRACAENACEAE

217.1.1 **Dracaena breviflora** Ridl., **FMP4** 335; nearly stemless shrub; tidal mud; Jh; endemic.

217.1.2 **Dracaena cantleyi** Baker, **T23** ??; *Dracaena aurantiaca* Wall. *ex* Hook.*f*., **FMP4** 336; shrub to 4m tall; swamps and forest margins; widespread.

217.1.3 **Dracaena chiniana** I.M. Turner, *nom. nov.*; *Dracaena congesta* [*non* (Sweet) Schult. & Schult.*f*.] Ridl., Trans. Linn. Soc. London, Bot. 3 (1893) 388, **FMP4** 334, **C15** 174; shrub to 30 m tall; lowland forest, also on limestone; widespread.

217.1.4 **Dracaena conferta** Ridl., **FMP4** 332, **T23**; *Dracaena robusta* Ridl., **FMP4** 332; *Dracaena curtisii* Ridl., **FMP4** 333, **C15** 174; shrub to 3 m tall; lowland and hill forest; widespread.

217.1.5 **Dracaena cuspidata** Ridl., **FMP4** 333; low shrub; lowland forest; Kl; endemic.

217.1.6 **Dracaena elliptica** Thunb., **FMP4** 337; shrub to 2 m tall; lowland to montane forest; widespread.

217.1.7 **Dracaena finlaysonii** Baker; **T23**; *Dracaena graminifolia* Wall. *ex* Hook.*f*., **FMP4** 333, **C15** 174; shrub barely 1 m tall; lowland and hill forest; Pn, Pk.

217.1.8 **Dracaena granulata** Hook.*f*., **FMP4** 332; tree to 20 m tall; wet lowland forest; Jh, Sp.

217.1.9 **Dracaena longifolia** Ridl., **FMP4** 335; low shrub; lowland forest; Ph; ?endemic.

217.1.10 **Dracaena maingayi** Hook.*f*., **FMP4** 335; *Dracaena penangensis* Ridl., **FMP4** 335; tree to 20 m tall; dry spots in the lowlands, near the sea; mostly in the south of Malaya; ?endemic.

217.1.11 **Dracaena nutans** Ridl., **FMP4** 337, **C15** 175; shrub to 4 m tall; damp thickets, also on limestone; Kl, Ph.

217.1.12 **Dracaena pendula** Ridl., **FMP4** 337; shrub to 2 m tall; swampy lowland forest; Pk, Ml; ?endemic.

217.1.13 **Dracaena porteri** Baker, **FMP4** 333; shrub to 2 m tall; lowland forest; widespread.

217.1.14 **Dracaena siamica** Ridl., **FMP4** 334; dwarf shrub to 50 cm tall; open sandy spots; Ps.

217.1.15 **Dracaena singapurensis** Ridl., **FMP4** 334; dwarf shrub to 50 cm tall; lowland forest; south of Malaya; ?endemic.

217.1.16 **Dracaena trachystachys** Hook.*f*., **FMP4** 336; small tree to 6 m tall; lowland forest; widespread.

217.1.17 **Dracaena umbratica** Ridl., **FMP4** 334; low shrub about 1 m tall; lowland forest; widespread.

217.1.18 **Dracaena yuccifolia** Ridl., **FMP4** 338, **C15** 175; shrub to 5 m tall; on limestone; north of Malaya.

218. ERIOCAULACEAE

218.1.1 **Eriocaulon australe** R. Br., **M50** 296; herb; Pn, Tg, Pk, Sl, Jh.

218.1.2 **Eriocaulon disepalum** Ridl., **FMP5** 136; herb to 15 m tall; rice-fields; Kl; endemic.

218.1.3 **Eriocaulon hookeranum** Stapf, **FMP5** 135; herb to 20 cm tall; among rocks on high mountains; Gg Tahan, Ph.

218.1.4 **Eriocaulon lasiolepis** Ruhl., **M50** 296; herb; Ml; endemic.

218.1.5 **Eriocaulon oryzetorum** Mart., **M50** 296; herb; Pn, Sp.

218.1.6 **Eriocaulon silicicolum** Ridl., **FMP5** 134; tufted herb to 50 cm tall; mountain tops; Gg Tahan, Ph; endemic.

218.1.7 **Eriocaulon truncatum** Buch.-Ham. *ex* Mart., **FMP5** 135, **M49** 501; **M47** 280; *Eriocaulon glabriflorum* Ridl., **FMP5** 135; tufted herb to 10 cm tall; common weed of damp ground; widespread.

218.1.8 **Eriocaulon willdenovianum** Moldenke, **M48** 44; *Eriocaulon sexangulare auct. non* L., **FMP5** 133; *Eriocaulon longifolium* (*non* Raf.) Nees *ex* Kunth, **M44** 278; tufted herb to 50 cm tall; open damp places; widespread.

218.1.9 **Eriocaulon xeranthemum** Mart., **FMP5** 135; herb about 10 cm tall; open grassy places; Pn.

219. FLAGELLARIACEAE

219.1.1 **Flagellaria indica** L., **FMP4** 368 incl. var. *minor* (Blume) Hook.*f*., **FM14** 246; climber 2–15 m long; common in damp forest near the sea, but also inland to 1500 m; widespread.

220. GRAMINEAE

220.1.1 **Acroceras munroanum** (Balansa) Henrard, **G08** 165; *Acroceras ridleyi* (Hack. *ex* Ridl.) Stapf *ex* Ridl., **FMP5** 229; stoloniferous herb to 50 cm tall; coastal sands, moist shady places; Kd, Ph, Sl, Jh.

220.1.2 **Acroceras tonkinense** (Balansa) C.E. Hubb. *ex* Bor, **G08** 165; *Acroceras sparsum* Stapf *ex* Ridl., **FMP5** 229; decumbent herb to 100 cm tall; forest margins, riverbanks, lowlands and hills; Kd, Kl, Pn, Pk, Ph, Sl, Ml, Jh.

220.2.1 **Alloteropsis cimicina** (L.) Stapf, **FMP5** 223, **G08** 198; prostrate herb to about 30 cm tall; weed of moist or lightly shaded places; Kd, Pn, Jh, Sp.

220.3.1 **Alopecurus geniculatus** L., **S65** 104; herb; weed; Genting Highlands; naturalized from temperate Eurasia.

220.4.1 **Apluda mutica** L., **G08** 273, **C16** 33; *Apluda varia* Hack. var. *intermedia* Hack., **FMP5** 207; herb 1–2 m tall; often, though not exclusively, on limestone; Kd, Kl, Ph.

220.5.1 **Aristida culionensis** Pilg., **G08** 112; tufted herb to 1.2 m tall; Ps.

220.6.1 **Arthraxon hispidus** (Thunb.) Makino, **V22** 266; *Arthraxon nudus* (Nees *ex* Steud.) Hochst., **G08** 287; *Arthraxosn micans* (Nees) Hochst., **G08** 288; herb to 200 m tall; north of Peninsula.

220.6.2 **Arthraxon lanceolatus** (Roxb.) Hochst., **V22** 281; *Arthraxon prionodes* (Steud.) Dandy, **G08** 287, **C16** 33; herb to 75 cm tall; on dry limestone; Gg Baling, Kd.

220.7.1 **Arundinella setosa** Trin., **FMP5** 239, **G08** 95; densely clumped herb to 120 cm tall; rocky ground on dry hills; Kd, Kl.

220.8.1 **Axonopus affinis** A. Chase, **G08** 189; stoloniferous herb to 65 cm tall; waste places, lawns; Kd, Sl; naturalized from tropical America.

220.8.2 **Axonopus compressus** (Sw.) P. Beauv, **FMP5** 216, **G08** 187, **M47** 388; creeping herb to 50 cm tall; open sites in the lowlands; throughout; naturalized from tropical America.

220.9.1 **Bambusa farinacea** K.M. Wong, **W29** 90; *Bambusa burmanica auct. non* Gamble, **H43** 62, G08 19; bamboo to 10 m tall; Kd, Kl, Ph, Sl.

Bambusa heterostachya (Munro) Holttum [**H43** 65, **G08** 18; **W29** 92] and *Bambusa laxa* K.M. Wong [**W29** 94] are only known in cultivation but are possibly endemic to Malaya.

220.10.1 **Bothriochloa bladhii** (Retz.) S.T. Blake, **L15** 24; *Amphilophis glabra* (Roxb.) Stapf, **FMP5** 209; *Bothriochloa intermedia* (R.Br.) A. Camus, **G08** 281; tufted herb to 90 cm tall; roadsides and field edges; Ps, Kd, Ph, Sl, Ml.

220.10.2 **Bothriochloa pertusa** (L.) A. Camus, **G08** 281; *Amphilophis pertusus* (L.) Nash *ex* Stapf, **FMP5** 209; herb; once from Ml.

220.11.1 **Briza minor** L., **G08** 57; slender herb to 75 cm tall; open places at the Hill Stations; Ph; naturalized from the Mediterranean region.

220.12.1 **Capillipedium parviflorum** (R.Br.) Stapf, **G08** 279; tufted herb 60–100 cm tall; on limestone; only known from Gg Baling, Kd.

220.13.1 **Cenchrus brownii** Roem. & Schult., J.F. Veldkamp *pers. comm.*; *Cenchrus echinatus auct. non* L., **S23** 36; herb to 40 cm tall; roadsides, dry waste ground; Sl, Jh; Sp; naturalized from tropical America.

220.14.1 **Centotheca lappacea** (L.) Desv., **FMP5** 253, **G08** 53, **C18** 110; *Centotheca latifolia* (Osbeck) Trin., **M55** 59; rosette-forming herb to 1 m tall; shady places to 1500 m; widespread.

220.14.2 **Centotheca longilamina** Ohwi, **G08** 53, **M55** 60; herb to 120 cm tall; shady places to 600 m; Kd, Pn, Pk, Ph, Sl, Jh, Sp.

220.15.1 **Chloris barbata** Sw., **FMP5** 250, **G08** 86; densely tufted grass to 100 cm tall; open dry places; Pn, Pk, Sl, Jh, Sp; naturalized from tropical America.

220.15.2 **Chloris gayana** Kunth, **G08** 87; herb 50–100 cm tall; waste places in the lowlands and mountains; Cameron Highlands, Ph; Subang, Sl; naturalised from tropical Africa.

220.16.1 **Chrysopogon aciculatus** (Retz.) Trin., **FMP5** 207, **G08** 236; creeping herb forming a dense turf, 20–60 cm tall; abundant in open places; throughout.

220.16.2 **Chrysopogon fulvus** (Spreng.) Chiov., **G08** 237; *Chrysopogon collinus* Ridl., **FMP5** 208; densely tufted herb to 75 cm tall; in dry sandy spots; Bt Wang, Kd and P. Burong, Ph.

220.16.3 **Chrysopogon orientalis** (Desv.) A. Camus, **G08** 238; *Chrysopogon wightianus* (Nees *ex* Steud.) Thwaites, **FMP5** 208; creeping herb to 80 cm tall; on limestone or coastal sand; P. Langkawi, Kl, Tg, Ph.

220.17.1 **Coelachne simpliciuscula** (Wight & Arn. *ex* Steud.) Munro *ex* Benth., **G08** 118; small tufted herb to 15 cm tall; damp places in the lowlands; Kd.

220.18.1 **Coix gigantea** J. König *ex* Roxb., **FMP5** 191, **G08** 307; herb to 3 m tall; damp places; once on bank of Sg Kinta, Pk.

220.18.2a **Coix lacryma-jobi** L. var. **lacryma-jobi**, **FMP5** 191, **G08** 304; herb 90–250 cm tall; common on waste land; widespread.

220.18.2b **Coix lacryma-jobi** L. var. **ma-yuen** (Romanet) Stapf, **G08** 306; herb; forest clearings as escape or relic from shifting cultivation; Jh.

220.18.2c **Coix lacryma-jobi** L. var. **monilifer** Watt, **FMP5** 191, **G08** 307; herb; Ml.

220.19.1 **Cymbopogon calcicola** C.E. Hubb., **G08** 297, **C16** 34; tufted herb to 150 cm tall; on limestone to 400 m; Kd, Ph.

220.19.2 **Cymbopogon flexuosus** (Nees *ex* Steud.) W. Watson, **G08** 297; herb to 3 m tall; waste places; Sp; naturalized.

220.20.1 **Cynodon dactylon** (L.) Pers., **FMP5** 249, **G08** 90, **M47** 398; creeping herb 10–40 cm tall; common on open sandy sites in the lowlands; throughout.

220.20.2 **Cynodon radiatus** Roth *ex* Roem. & Schult.; J.F. Veldkamp *pers. comm.*; herb to 70 cm tall; waste ground, roadsides, usually near the sea; Kd, Sl.

220.21.1 **Cyrtococcum accrescens** (Trin.) Stapf, **FMP5** 234, **G08** 149; slender scrambling herb 20–100 cm tall; shady places in the lowlands; common throughout.

220.21.2 **Cyrtococcum oxyphyllum** (Steud.) Stapf, **FMP5** 233, **G08** 148; slender creeping herb 15–50 cm tall; common in lightly shaded places, lowlands and mountains; throughout.

220.21.3 **Cyrtococcum patens** (L.) A. Camus, **G08** 148; *Cyrtococcum carinatum* Stapf *ex* Ridl., **FMP5** 233; slender scrambling herb to 50 cm tall; shady places; Sl, NS, Ml.

220.22.1 **Dactyloctenium aegyptium** (L.) Willd., **FMP5** 251 '*aegyptiacum*', **G08** 81, **M44** 400; rosette-forming herb 10–40 cm tall; sandy places in the lowlands, including seashores; Pn, Pk, Ph, Sl, Jh, Sp.

220.23.1 **Dendrocalamus asper** (Roem. & Schult.) Backer *ex* Heyne, **H43** 100, **G08** 27; **W29** 107; *Dendrocalamus flagellifer* Munro, **FMP5** 265; large bamboo to 20 m tall; widely cultivated but possibly native.

220.23.2 **Dendrocalamus dumosus** (Ridl.) Holttum, **H43** 96, **G08** 30, **C16** 34, **W29** 109; *Schizostachyum dumosum* Ridl., **FMP5** 271; bamboo to 5 m tall; forest on limestone; P. Langkawi and Gg Baling, Kd.

220.23.3 **Dendrocalamus elegans** (Ridl.) Holttum, **H43** 95, **G08** 30, **C16** 34, **W29** 109; *Schizostachyum elegans* Ridl., **FMP5** 271; bamboo to 6 m tall; on limestone; P. Langkawi, Kl.

220.23.4 **Dendrocalamus hirtellus** Ridl., **FMP5** 266, **H43** 93, **G08** 29, **W29** 113; *Bambusa klossii* Ridl., **FMP5** 259; bamboo to 15 m tall; openings in lowland forest; Kd, Kl, Pk, Ph, NS, Jh; endemic.

220.23.5 **Dendrocalamus longispathus** (Kurz) Kurz, **W29** 115; bamboo 12–20 m tall; lowland forest; once each from Kl and Tg.

220.23.6 **Dendrocalamus pendulus** Ridl., **FMP5** 266, **H43** 90, **G08** 29, **W29** 115; *Cephalostachyum malayense* Ridl., **FMP5** 267; *Schizostachyum subcordatum* Ridl., **FMP5** 269; bamboo to 25 m tall; openings in lowland forest to 800 m; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic.

220.23.7 **Dendrocalamus sinuatus** (Gamble) Holttum, **H43** 97, **G08** 28, **W29** 117; *Oxytenanthera sinuata* Gamble, **FMP5** 264; slender bamboo 12–15 m tall; lowlands; Tg, Pk, Ph, Sl, NS.

220.24.1 **Dichanthium annulatum** (Forssk.) Stapf, **G08** 284, **C16** 35; *Ischaemum beccarrii auct. non* Hack., **FMP5** 204; densely tufted herb to 100 cm tall; on limestone; Kd, Sl.

220.24.2 **Dichanthium caricosum** (L.) A. Camus, **FMP5** 210, **G08** 284; slender tufted herb 30–100 cm tall; open sunny sites; Kd, Sl, Ph, Sp.

220.24.3 **Dichanthium mucronulatum** R.K. Jansen, **G08** 283, **C16** 35; wiry-stemmed herb to 75 cm tall; on limestone; P. Langkawi, Ph, Sl; endemic.

220.25.1 **Digitaria ciliaris** (Retz.) Koeler, **G08** 196, **V27** 32, **M47** 402; *Digitaria marginata* Link, **FMP5** 213 incl., in part, var. *ciliaris* Hook.*f.*; herb forming loose mats, to 60 cm tall; waste places to 1700 m; Kd, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

220.25.2 **Digitaria didactyla** Willd., **G08** 195 incl. var. *peninsulae* (Ohwi) Henrard, **V27** 44; tufted yet stoloniferous herb to 40 cm tall; roadsides and lawns to 1800 m; Pn, Ph, Sl, Ml, Sp.

220.25.3 **Digitaria fuscescens** (Presl) Henrard, **G08** 193, **V27** 61, **M47** 404; creeping herb to 40 cm tall; disturbed sites; Pn, Ph, Sl, Sp.

220.25.4 **Digitaria heterantha** (Hook.*f.*) Merr., **V27** 46; *Digitaria barbata auct. non* Willd., **FMP5 215**; *Digitaria dispar* Henrard, **G08** 193; creeping herb to 80 cm tall; locally common on sandy beaches; Ph, Jh.

220.25.5 **Digitaria longiflora** (Retz.) Pers., **FMP5** 214 in part, **G08** 192, **V27** 66, **M47** 406; tufted mat-forming herb to 50 cm tall; early coloniser of disturbed soil; to 700 m.

220.25.6 **Digitaria mollicoma** (Kunth) Henrard, **V27** 69; mat-forming herb to 50 cm tall; open sites in the lowlands; Pn, Sl, Sp.

220.25.7 **Digitaria pusilla** Ridl., **FMP5** 215 in part, **G08** 191, **V27** 62; mat-forming herb to 25 cm tall; sandy places to 300 m; P. Langkawi, Kd, Sp.

220.25.8 **Digitaria radicosa** (Presl) Miq., **V27** 35; *Digitaria marginata* Link var. *debilis auct. non* Ridl., **FMP5** 214 in part; *Digitaria timorensis* (Kunth) Balansa, **G08** 198; herb forming loose mats to 60 cm tall; waste places.

220.25.9a **Digitaria setigera** Roem. & Schult. var. **calliblepharata** (Henrard) Veldkamp, **V27** 40; *Digitaria marginata* Link var. *ciliaris auct. non* Ridl., **FMP5** 214 in part; *Digitaria microbachne* (Presl) Henrard ssp. *calliblepharata* Henrard, **G08** 194; *Digitaria microstachya* Henrard, **G08** 195; herb forming loose mats to 90 cm tall; waste places; Ph, Ml, Jh, Sp.

220.25.9b **Digitaria setigera** Roem. & Schult. var. **setigera**, **V27** 37; *Digitaria marginata* Link var. *commutata auct. non* Ridl., **FMP5** 214 in part; *Digitaria microbachne* (Presl) Henrard, **G08** 194; herb forming loose mats to 120 cm tall; waste places; Jh, Sp.

220.25.10 **Digitaria violascens** Link, **G08** 191, **V27** 63, **M47** 414; *Digitaria pertenuis* Büse, **FMP5** 214, **G08** 192; *Digitaria longiflora auct. non* Pers., **FMP5** 215 in part; *Digitaria caespitosa* Ridl., **FMP5** 215; *Digitaria chinensis auct. non* Hornem., **FMP5** 215; *Digitaria pusilla auct. non* Ridl., **FMP5** 215 in part; tufted herb to 70 cm tall; waste places to 1600 m; Kd, Pn, Pk, Ph, Sl, NS, Jh, Sp.

220.26.1 **Dimeria ciliata** Merr., **G08** 214; *Dimeria fuscescens auct. non* Trin., **FMP5** 191; herb to 80 cm tall; Ps.

220.26.2 **Dimeria kurzii** Hook.*f*., **FMP5** 192, **G08** 216; slender tufted herb 15–30 cm tall; sandy places; Kd.

220.26.3 **Dimeria leptorhachis** Hack.; **C18** 176; *Dimeria velutina* (Hack.) Bor, **G08** 213; herb 60–100 cm tall; Kd.

220.26.4a **Dimeria ornithopoda** Trin. var. **glabra** (Ridl.) R.K. Jansen, **G08** 216; *Dimeria glabra* Ridl., **FMP5** 192; slender tufted herb 15–40 cm tall; lowlands; Ph, NS, Sp.

220.26.4b **Dimeria ornithopoda** Trin. var. **ornithopoda**, **FMP5** 192, **G08** 214; slender tufted herb 15–40 cm tall; dry grassy places; Kd, Pn, Sl, Jh, Sp.

220.27.1 **Dinochloa malayana** S. Dransf., **D40** 110; *Dinochloa sp. 1*, **W29** 121; *Dinochloa scandens auct. non* (Blume) Kuntze, **H43** 84, **G08** 25; *Dinochloa tjankorreh* Büse, **FMP5** 267; climbing bamboo; lowland forest; Ps, P. Langkawi, Kl, Pk, Ph, Sl.

220.27.2 **Dinochloa sp.** 2, **W29** 121; slender climbing bamboo; P. Redang, Tg.

220.27.3 **Dinochloa sp.** 3, **W29** 121; slender climbing bamboo; forest; twice from Jh.

220.28.1 **Echinochloa colona** (L.) Link, **FMP5** 222, **G08** 167, **M47** 416; herb to 60 cm tall; waste ground, frequently wet sites; Ps, Kd, Kl, Pn, Ph, Sl, Ml, Jh, Sp.

220.28.2 **Echinochloa crusgalli** (L.) P. Beauv., **FMP5** 222, **G08** 168, **M47** 418; herb to 120 cm tall; common in wet places; Ps, Kd, Kl, Pn, Ph, Sl, Ml, Jh, Sp.

220.28.3 **Echinochloa stagnina** (Retz.) P. Beauv., **G08** 166, **M47** 420; aquatic herb emerging to 200 cm tall; once in Sp.

220.29.1 **Eleusine indica** (L.) Gaertn., **FMP5** 250, **G08** 78, **M47** 422; loosely tufted herb to 50 cm or more tall; open places and waste ground to 1700 m; throughout.

220.30.1 **Enteropogon dolichostachyus** (Lag.) H. Keng *ex* Lazarides, **L15** 160; *Chloris dolichostachya* Lag., **G08** 86; densely tufted herb 60–100 cm tall; once on exposed rocks; P. Langkawi.

220.31.1 **Eragrostis amabilis** (L.) Wight & Arn. *ex* Hook. & Arn., **N11** 309; *Eragrostis tenella* (L.) P. Beauv. *ex* Roem. & Schult., **FMP5** 245, **G08** 71, **M47** 424; *Eragrostis viscosa* (Retz.) Trin., **FMP5** 246, **G08** 71; small herb 5–30 cm tall; common on open waste ground; Kd, Pn, Kl, Pk, Sl, Ml, Sp.

220.31.2 **Eragrostis atrovirens** (Desf.) Trin. *ex* Steud., **G08** 68; *Eragrostis elegantula* Steud., **FMP5** 248; distinctly blue-green herb to 120 cm tall; waste places to 1600 m; Ps, Kd, Kl, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

220.31.3 **Eragrostis cumingii** Steud., **G08** 65; *Eragrostis elongata sensu* Ridl., **FMP5** 248 in part at least; *Eragrostis pilosa auct. non* (L.) P. Beauv., **FMP5** 247, **G08** 69; slender wiry herb 10–100 cm tall; weed of dryish sites; Kd, Pn, Ph, Sl, Jh, Sp.

220.31.4 **Eragrostis gangetica** (Roxb.) Steud., **G08** 68; *Eragrostis cambessediana* Steud., **S23** 36; glaucous herb 40–60 cm tall; once in Sp.

220.31.5 **Eragrostis japonica** (Thunb.) Trin., **G08** 70; *Eragrostis interrupta auct. non* (R.Br.) P. Beauv., **FMP5** 246; herb 60–120 cm tall; sand bars and beaches; Ph.

220.31.6 **Eragrostis luzoniensis** Steud.; J.F. Veldkamp *pers. comm.*; *Eragrostis pubescens auct. non* (R.Br.) Steud., **G08** 64; wiry herb to 80 cm tall; dry open grassland; Ps.

220.31.7 **Eragrostis montana** Balansa; J.F. Veldkamp *pers. comm.*; *Eragrostis malayana* Stapf. **FMP5** 247, **G08** 65; rosette-forming herb to 60 cm tall; open sandy places in the lowlands; Pn, Ph, Sl, Kd, Ml, Sp.

220.31.8 **Eragrostis multicaulis** Steud., **G08** 70; small tufted herb not exceeding 15 cm tall; waste places; Pk, Ph.

220.31.9 **Eragrostis unioloides** (Retz.) Nees *ex* Steud., **G08** 66, **M47** 426; *Eragrostis amabilis auct. non* (L.) Hook. & Arn., **FMP5** 246; tufted herb to 50 cm tall; in damp or wet places to 1000 m; throughout.

220.32.1 **Eremochloa ciliaris** (L.) Merr., **G08** 275; *Eremochloa malayana* Ridl., **FMP5** 196; tufted herb 30–70 cm tall; open sandy spots to 1000 m; Kd.

220.33.1 **Eriachne pallescens** R.Br., **FMP5** 240, **G08** 94, **V06** 133, **L16** 422; tufted herb 50–90 cm tall; open dry places, waste areas; Ps, Pn, Kl, Tg, Ph, Sl, Ml, Jh, Sp.

220.33.2 **Eriachne triseta** Nees *ex* Steud., **FMP5** 240, **V06** 136, **L16** 422; *Massia triseta* (Nees *ex* Steud.) Balansa, **G08** 94; tufted herb to 80 cm tall; dry sandy places, often near the sea; Tg, Ph, NS, Ml, Sp.

220.34.1 **Eriochloa procera** (Retz.) C.E. Hubb., **G08** 202, **M47** 428; *Eriochloa annulata* (Flüggé) Kunth, **FMP5** 223; herb 60–150 cm tall; waste ground, especially near the sea; Ps, Kd, Pn, Pk, Sl, Jh, Sp.

220.35.1 **Eulalia lanipes** Ridl., **FMP5** 196, **G08** 243; tufted herb to about 100 cm tall; only known from 900–1300 m on Gg Jerai, Kd; Endemic.

220.35.2 **Eulalia leschenaultiana** (Decne.) Ohwi, **G08** 241; wiry herb to 45 cm tall; roadsides, padi-field bunds; Kd, Kl, Ph.

220.35.3 **Eulalia milsumi** Ridl., **FMP5** 196, **G08** 240; slender wiry tufted herb to 50 cm tall; on quartzite ridges at about 450 m; known only from the Klang Gates area, Sl; endemic.

220.35.4 **Eulalia quadrinervis** (Hack.) Kuntze, **G08** 244, **C16** 36; slender, densely tufted herb 50–100 cm tall; on limestone; P. Langkawi.

220.35.5 **Eulalia ridleyi** (Hack.) A. Camus, **FMP5** 197, **G08** 241; creeping herb to 45 cm tall; coastal sand dunes; Ph, Jh; endemic.

220.35.6 **Eulalia trispicata** (Schult.) Henrard, **G08** 242; densely tufted herb 50–100 cm tall; on limestone; Ps.

220.36.1 **Eustachys tenera** (Presl) A. Camus, **G08** 88; *Chloris tenera* (Presl) Scribn., **M28** 131; stoloniferous herb 20–45 cm tall; open sites in the lowlands, weed; Kl, Pn, Ph, Sp.

220.37.1 **Garnotia acutigluma** (Steud.) Ohwi, **G08** 116, **G16** 540; *Garnotia stricta auct. non* Brongn., **FMP5** 242; tufted herb 20–60 cm tall; damp sites in the lowlands and mountains; Kd, Pk, Ph.

220.37.2 **Garnotia tenella** (Arn. *ex* Miq.) Janowski, **G14** 528; *Garnotia patula auct. non* (Munro) Benth., **G08** 116; tufted herb 15–60 cm; damp rocky slopes in the mountains; Gg Jerai, Kd, and Kuala Teku, Ph.

220.38.1 **Gigantochloa albovestita** (Holttum) K.M. Wong, **W29** 125; *Gigantochloa scortechinii* Gamble var. *albovestita* Holttum, **H43** 124, **G08** 33, **W15** 347; slender bamboo to 12 m tall; lowlands; Kd, Pn; endemic.

220.38.2 **Gigantochloa holttumiana** K.M. Wong, **W23** 346, **W15** 357, **W29** 126; clumped bamboo 10–15 m tall; montane forest; only known from Fraser's Hill, Ph; endemic.

220.38.3 **Gigantochloa latifolia** Ridl., **FMP5** 262, **H43** 132 incl. var. *efimbriata* Holttum, **G08** 34, **W15** 359; **W29** 129 *Oxytenanthera auriculata* Prain, **FMP5** 264; densely clumped bamboo to 6–9 m tall; lowlands and hills; Kd, Pk, Ph; endemic.

220.38.4 **Gigantochloa ligulata** Gamble. **FMP5** 262, **H43** 129, **G08** 34, **W15** 361, **W29** 131; densely clumped bamboo to 9 m tall; lowlands; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh.

220.38.5 **Gigantochloa rostrata** K.M. Wong, **W15** 333, **W29** 134; *Gigantochloa maxima* Kurz var. *minor* Holttum, **H43** 116; bamboo 4–8 m tall; Gg Raya, P. Langkawi.

220.38.6 **Gigantochloa scortechinii** Gamble, **FMP5** 261, **H43** 122, **G08** 32, **W15** 341, **W29** 138; densely clumped bamboo to 20 m tall; hill forest, also widely cultivated; throughout.

220.38.7 **Gigantochloa wrayi** Gamble, **FMP5** 261, **H43** 124, **G08** 33, **W15** 339, **W29** 142; *Gigantochloa maxima* Kurz var. *viridis* Holttum, **H43** 115, **G08** 36; bamboo to 10 m tall; lowlands, also cultivated in villages; Kd, Pn, Pk, Sl, Jh.

220.38.8 **Gigantochloa sp.** 2, **W29** 143; bamboo 4–5 m tall; once from Nami F.R., Kd.

The following species are only known from cultivation but are possibly endemic to Malaya: *Gigantochloa albopilosa* K.M. Wong [**W29** 124], *Gigantochloa thoii* K.M. Wong [**W29** 140] and *Gigantochloa sp. 1* [**W29** 143].

220.39.1 **Hemarthria compressa** (L.*f.*) R.Br., **G08** 266; sprawling herb; wet places in the lowlands; Kd.

220.39.2 **Hemarthria longiflora** (Hook.*f.*) A. Camus, **G08** 266; *Hemarthria protensa auct. non* Nees *ex* Steud., **FMP5** 205; herb 60–100 cm tall; Kd, Kl.

220.40.1 **Heteropogon contortus** (L.) P. Beauv. *ex* Roem. & Schult., **FMP5** 213, **G08** 292; tufted herb 25–100 cm tall; sandy coasts; Kd, Pn, Ph, Sl, Sp.

220.41.1 **Holttumochloa korbuensis** K.M. Wong, **W28** 520, **W29** 144; slender bamboo; montane forest; Gg Korbu, Pk; endemic.

220.41.2 **Holttumochloa magica** (Ridl.) K.M. Wong, **W28** 520, **W29** 145; *Bambusa magica* Ridl., **FMP5** 258, **H43** 75, **G08** 22; *Bambusa elegans* Ridl., **FMP5** 258; slender bamboo to 5 m tall; exposed mountain ridges at 1200–2000 m; Ph, Sl; endemic.

220.41.3 **Holttumochloa pubescens** K.M. Wong, **W28** 523, **W29** 149; slender bamboo; upper montane forest at 1450 m; summit of Gg Stong, Kl; Endemic.

220.42.1 **Hymenachne acutigluma** (Steud.) Gilliland, **G08** 155, **M47** 432; *Hymenachne mynros auct. non* (H.B.K.) P. Beauv., **FMP5** 230; creeping herb to 100 cm tall or more; open swampy sites and riverbanks; Ps, Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

220.43.1 **Ichnanthus pallens** (Sw.) Munro *ex* Benth. var. **major** (Nees) Stieber, **S38** 207; *Ichnanthus pallens* (Sw.) Munro *ex* Benth., **FMP5** 231; *Ichnanthus vicinus* (F.M. Bail.) Merr., **G08** 144; creeping and scrambling herb 20–40 cm tall; lowland and hill forests to 1300 m; Kd, Pk, Ph, Sl, NS, Jh.

220.44.1 **Imperata conferata** (Presl) Ohwi, **G08** 222; *Imperata exaltata auct. non* Brongn., **FMP5** 193; rhizomatous herb to 200 cm tall; open places usually near the sea; Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

220.44.2 **Imperata cylindrica** (L.) P. Beauv. var. **major** (Nees) C.E. Hubb. *ex* C.E. Hubb. & Vaughn, **G08** 220, **M47** 434; *Imperata arundinacea* Cirillo, **FMP5** 193; rhizomatous herb about 100 cm tall; frequent colonizer of bare ground in lowlands and mountains; throughout.

220.45.1 **Isachne albens** Trin., **FMP5** 237, **G08** 121; herb 30–100 cm tall; in clearings in the mountains; commonest about 1300 m; Tg, Pk, Ph, Sl.

220.45.2 **Isachne confusa** Ohwi, **G08** 121; *Isachne rigida auct. non* Nees *ex* Steud., **FMP5** 238; slender wiry herb 10–45 cm tall; wet places in lowlands and mountains to 1300 m; Ps, Kd, Tg, Ph.

220.45.3 **Isachne globosa** (Thunb.) Kuntze, **G08** 123, **M47** 436; *Isachne australis* R.Br., **FMP5** 239; herb 20–90 cm tall; open wet places; Ps, Kd, Tg, Pn Pk, Ph, Sl, NS, Jh, Sp.

220.45.4 **Isachne kinabaluensis** Merr., **G08** 125; *Isachne javana auct. non* Nees, **FMP5** 238; tufted herb to 60 cm tall; exposed places on mountains 1600–2300 m; Kl, Tg, Pk, Ph, Jh.

220.45.5 **Isachne kunthiana** (Wight & Arn. *ex* Steud.) Miq., **G08** 122; *Isachne semitalis* Ridl., **FMP5** 237; scrambling herb 10–20 cm tall; damp lightly wooded places in the lowlands; Pk, Sl, Ml, Jh, Sp.

220.45.6 **Isachne langkawiensis** R.K. Jansen, **G08** 120, **C16** 36; slender tufted herb 15–40 cm tall; abundant in open sites on limestone; only known from P. Langkawi; endemic.

220.45.7 **Isachne pulchella** Roth *ex* Roem. & Schult., **G08** 120, **M47** 438; *Isachne miliacea* Roth *ex* Roem. & Schult., **FMP5** 239; slender creeping herb to 20 cm tall; in damp lowland forest; Ps, Ph, Sp.

220.45.8 **Isachne saxicola** (Ridl.) Ridl., **FMP5** 237, **G08** 122; cushion forming herb to 45 cm tall; open places in the mountains at 1600 m and above; Pk, Ph.

220.45.9 **Isachne sylvestris** Ridl., **FMP5** 238, **G08** 125; herb to 50 cm tall; lowland forest; Pk.

220.46.1 **Ischaemum apricum** Ridl., **FMP5** 203, **G08** 262; long-creeping herb to 90 cm tall; open sites; Pn; endemic.

220.46.2 **Ischaemum barbatum** Retz. var. **imbricatum** (Munro *ex* Hack.) R.K. Jansen, **G08** 260; *Ischaemum imbricatum* (Munro *ex* Hack.) Stapf *ex* Ridl., **FMP5** 200; herb 60–120 cm tall; disturbed sites, weed of cultivation; Ps, Kd, Kl, Tg, Jh, Sp.

220.46.3 **Ischaemum ciliare** Retz., **V28** 180; *Ischaemum indicum auct. non* (Houtt.) Merr., **G08** 263; *Ischaemum aristatum auct. non* L., **FMP5** 203; creeping herb to 60 cm tall; open grassy areas; Kd, Tg, Pn, Sp.

220.46.4 **Ischaemum fieldingianum** Rendle, **FMP5** 202, **G08** 257; *Ischaemum commelynifolium* Stapf *ex* Ridl., **FMP5** 202; *Ischaemum maculatum* Stapf *ex* Ridl., **FMP5** 202; herb 60–100 cm tall; swampy lowlands or on mountains; Kd, Ml, Jh.

220.46.5 **Ischaemum fluviatile** Ridl., **FMP5** 202, **G08** 260; herb 50 cm long; on rocks in river; known only from type; Kelumpur, Kl; endemic.

220.46.6 **Ischaemum magnum** Rendle, **FMP5** 200, **G08** 261; *Ischaemum laeve* Ridl., **FMP5** 201; herb to 200 cm tall; often along ditches and canals; Ps, NS, Jh, Sp.

220.46.7 **Ischaemum muticum** L., **FMP5** 201, **G08** 255; long-creeping herb 15–40 cm tall, often turf-forming; common particularly near the sea; throughout.

220.46.8 **Ischaemum polystachyum** Presl, **G08** 264; *Pollinia rupestris* Ridl., **FMP5** 199; *Ischaemum plumulosum* Stapf *ex* Ridl., **FMP5** 201; herb to 120 cm tall; river banks; Jh.

220.46.9 **Ischaemum rugosum** Salisb., **FMP5** 200, **G08** 259, **M47** 440; herb to 100 cm tall; waste places; Sl, Ml, Jh, Sp.

220.46.10 **Ischaemum timorense** Kunth, **G08** 264, **M47** 442; *Ischaemum macrurum* Stapf *ex* Ridl., **FMP5** 203; herb 15–60 cm tall; common in open grassy places; Ps, Kd, Pn, Pk, Ph, Sl, Ns, Jh, Sp.

220.47.1 **Kinabaluchloa wrayi** (Stapf) K.M. Wong, **W28** 524, **W29** 150; *Bambusa wrayi* Stapf, **FMP5** 259, **H43** 73, **G08** 22; bamboo to 18 m tall; montane forest at 1500–2000 m; Kl, Tg, Pk, Ph; endemic.

220.48.1 **Leersia hexandra** Sw., **FMP5** 253, **G08** 97, **M47** 444; slender herb to 100 cm long, often floating; open swampy areas; Kd, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

220.49.1 **Leptaspis urceolata** (Roxb.) R.Br., **FMP5** 255, **G08** 47; *Scrotochloa urceolata* (Roxb.) Judz.; **C18** 400; herb to 1 m tall; lowland forest to 600 m; throughout.

220.50.1 **Leptochloa chinensis** (L.) Nees, **G08** 73, **FMP5** 249, **M47** 446, **N14** 83; tufted herb often procumbent, to 100 cm tall; weed of damp sites; Kl, Pn, Pk, Ph, Sl, Sp.

220.50.2 **Leptochloa malabarica** (L.) Veldkamp, **V26** 64, **N14** 84; *Diplachne fusca* (L.) P. Beauv., **G08** 76; tufted herb 50–100 cm tall; padi-fields; Kd, Pk.

220.50.3 **Leptochloa malayana** (C.E. Hubb.) R.K. Jansen *ex* Veldkamp, **V26** 64, **N14** 85; *Diplachne malayana* C.E. Hubb., **G08** 77; herb 20–80 cm tall; dry open places; Kd.

220.50.4 **Leptochloa panicea** (Retz.) Ohwi, **G08** 75, **N14** 87; *Leptochloa polystachya auct. non* Kunth., **FMP5** 248; slender herb to 120 cm tall; open areas in the lowlands; Ps, Kd, Ph.

220.51.1 **Lepturus repens** (G. Forst.) R.Br., **FMP5** 254, **G08** 83; creeping herb to 50 cm tall; coastal sands; Ph, Jh, Sp.

220.52.1 **Lolium perenne** L., **S62** 105; weed; Genting Highlands; naturalized from temperate regions.

220.53.1 **Lophatherum gracile** Brongn., **G08** 55; herb to 100 cm tall often forming loose rosette; openings in forest to 1650 m; Kd, Tg, Pn, Ph, Sl, NS, Ml, Jh, Sp.

220.54.1 **Maclurochloa montana** (Ridl.) K.M. Wong, **W28** 528, **W29** 153; *Dinochloa montana* Ridl., **FMP5** 267; *Bambusa pauciflora* Ridl., **FMP5** 259, **H43** 76, **G08** 23; *Bambusa montana* (Ridl.) Holttum, **H43** 77, **G08** 23; scrambling bamboo forming thickets; lower montane forest at 780–1350 m; Kd, Pn, Ph, Sl; endemic.

220.55.1 **Melinis repens** (Willd.) Zizka, **Z01** 116; *Rhynchelytrum repens* (Willd.) C.E. Hubb., **G08** 150; *Tricholaena rosea* Nees, **FMP5** 235; herb to 70 cm tall; sandy places, waste ground; widespread; naturalized from tropical Africa.

220.56.1 **Microstegium ciliatum** (Trin.) A. Camus, **G08** 249; *Pollinia ciliata* Trin. var. *glabrata* Ridl., **FMP5** 198; scrambling herb to 120 cm tall; forest margins to 1300 m; Pn, Pk, Ph, Sl.

220.56.2 **Microstegium geniculatum** (Hayata) Honda, **G08** 247; creeping herb to 150 cm tall; exposed places near streams and wet rocks; Cameron Highlands, Ph; endemic.

220.56.3 **Microstegium nudum** (Trin.) A. Camus, **G08** 250; slender creeping herb to 60 cm tall; stream margins in the hills at 1000 m; Fraser's Hill, Ph.

220.56.4 **Microstegium vagans** (Nees *ex* Steud.) A. Camus, **G08** 250; *Pollinia grata* Hack., **FMP5** 198; scrambling herb to 100 cm long; forest margins to 800 m; Ps, Kl, Pn.

220.57.1 **Miscanthus floridulus** (Labill.) Warb. *ex* K. Schum., **G08** 217; *Miscanthus japonicus auct. non* Andersson, **FMP5** 194; clumped herb 2–3 m tall; open sites in the mountains at 1200–1700 m; Ph, Jh.

220.57.2 **Miscanthus nepalensis** (Trin.) Hack., **G08** 218: densely tufted herb to 100 cm or more: open places in the mountains at 1500–2000 m; Cameron Highlands, Ph.

220.57.3 **Miscanthus ridleyi** (Hack.) I.M. Turner, **T21** 26; *Sclerostachya ridleyi* (Hack.) A. Camus, **FMP5** 194, **G08** 223; reed to 2.5 m tall; riverbank; Pekan, Ph.

220.58.1 **Mnesithea geminata** (Hack.) Ridl., **FMP5** 206, **G08** 267: tufted herb to 60 cm tall; coastal areas; Ph.

220.58.2 **Mnesithea glandulosa** (Trin.) de Koning & Sosef, **V32** 290; *Coelorachis glandulosa* (Trin.) Stapf *ex* Ridl., **FMP5** 204, **G08** 270; prop-rooted herb to 250 cm tall; lowlands and hills in open places, often by rivers; widespread.

220.58.3 **Mnesithea granularis** (L.) de Koning & Sosef, **V32** 295; *Manisuris granularis* (L.) L.*f*., **FMP5** 205; *Hackelochloa granularis* (L.) Kuntze, **G08** 277; herb 20-50 cm tall; one collection from each of Pn and Sp.

220.58.4 **Mnesithea helferi** (Hook.*f*.) de Koning & Sosef; **V32** 291; *Mnesithea rupincola* Ridl., **FMP5** 206; *Coelorachis helferi* (Hook.*f*.) Henrard, **G08** 272; herb 60–100 cm tall; Kd, Pn, Pk.

220.58.5 **Mnesithea mollicoma** (Hance) A. Camus, **G08** 268; *Mnesithea pubescens* Ridl., **FMP5** 206; herb to 70 cm tall; lowlands; Kd, Jh.

220.59.1 **Myriostachya wightiana** (Nees *ex* Steud.) Hook.*f*., **FMP5** 245, **G08** 62; densely tufted herb to 3 m tall; on estuarine or coastal mud; Ps, Pn, Pk.

220.60.1 **Neyraudia reynaudiana** (Kunth) H. Keng *ex* Hitchc., **G08** 61; *Triraphis madagascariensis sensu* Ridl., **FMP5** 251; reed to 3 m tall; in wet places; Ps, Kd, Pn, Pk, NS, Ml.

220.61.1 **Oplismenus burmanni** (Retz.) P. Beauv., **FMP5** 221, **G08** 172; slender creeping herb 10–30 cm tall; dry sandy places in the lowlands and hills to 1400 m; Kd, Pn, Ph.

220.61.2 **Oplismenus compositus** (L.) P. Beauv., **FMP5** 221, **G08** 171; slender creeping herb 20–60 cm tall; lowland and hill forest to 1700 m; Ps, Kd, Kl, Pn, Pk, Ph, Sl, Ml, Jh.

220.62.1 **Oryza meyeriana** (Zoll. & Moritzi) Baill. var. **granulata** (Nees & Arn. *ex* Watt) Duist., **D42** 185; *Oryza granulata* Nees & Arn. *ex* Watt, **G08** 101; herb to 80 cm tall; on river bank; Pk.

220.62.2 **Oryza minuta** Presl var. **silvatica** (Camus) Veldkamp, **G08** 102, **D42** 179, **V28** 232; *Oryza latifolia auct. non* Desv., **FMP5** 252; herb 50–200 cm tall; marshy grassland and wet forests; Kd, Pk, Sl, Jh.

220.62.3 **Oryza ridleyi** Hook.*f*., **FMP5** 252, **G08** 101, **D43** 187; tufted herb to 150 cm tall; shaded grassland, river and streamsides; Kd, Tg, Pk, Ph, Sl, Ml, Jh.

220.62.4 **Oryza rufipogon** Griff., **G08** 100, **D43** 170; *Oryza fatua* Trin. var. *longearistata* Ridl., **FMP5** 252; herb 70–90 cm tall; swampy places, sometimes aquatic; Ps, Kd, Ml, Sp.

220.63.1 **Ottochloa nodosa** (Kunth) Dandy, **G08** 143; *Hemigymnia multinodis* Stapf, **FMP5** 228; *Hemigymnia fusca* Ridl., **FMP5** 228; creeping herb 30–90 cm tall; forest margins and damp open places in the lowlands; Ps, Kd, Kl, Pn, Ph, Sl, Jh, Sp.

220.64.1 **Panicum auritum** Presl *ex* Nees, **FMP5** 226, **G08** 137, **V31** 187; herb to 200 cm tall; damp open places in the lowlands; Kd, Kl, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

220.64.2 **Panicum brevifolium** L., **G08** 139, **V31** 189; *Panicum ovalifolium* Poir., **FMP5** 227; *Panicum hirtifolium* Ridl., **FMP5** 228; slender decumbent herb 20–50 cm tall; shady places in lowlands and hills to 1000 m; Tg, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

220.64.3 **Panicum curviflorum** Hornem. var. **suishaense** (Hayata) Veldkamp, **V31** 191; *Panicum elegantissimum* Hook.*f*., **FMP5** 226, **G08** 132; densely tufted herb to 120 cm tall; lowlands; Pk.

220.64.4 **Panicum hayatae** A. Camus, **G08** 137 '*hyatae*'; herb to 70 cm tall; known only from Fraser's Hill, Ph.

220.64.5 **Panicum humidorum** Buch.-Ham. *ex* Hook.*f*., **G08** 142; *Panicum perakense* (Hook.*f*.) Merr., **FMP5** 226; herb to 3 m tall; in water at low altitudes; Pk, Sl, Jh.

220.64.6 **Panicum humile** Nees *ex* Steud., **FMP5** 224; *Panicum walense* Mez, **G08** 140; herb to 45 cm tall; dry open sites in the lowlands; Kd, Kl, Pn, Ph.

220.64.7 **Panicum luzonense** Presl, **V31** 195; *Panicum caesium* Nees, **FMP5** 225; *Panicum cambogiense* Balansa, **G08** 141; densely tufted herb to 50 cm tall; waste ground in the lowlands; Ps, Kd, Kl, Tg, Pk, Ph, Sp.

220.64.8 **Panicum maximum** Jacq., **FMP5** 226, **G08** 132, **V31** 197; densely clumped grass to 250 cm tall; waste ground, roadsides; widespread; naturalized from tropical Africa.

220.64.9 **Panicum notatum** Retz., **G08** 142, **V31** 199; *Panicum montanum* Roxb., **FMP5** 227; tufted herb to 120 cm tall; lowlands and hills to 1100 m; Ps, Kd, Pn, Ph, Sl.

220.64.10 **Panicum paludosum** Roxb., **G08** 134, **M47** 450, **V31** 200; *Panicum proliferum auct. non* Lam., **FMP5** 225; floating herb; lowland swamps and padi-fields; Kd, Pn, Ph.

220.64.11 **Panicum repens** L., **FMP5** 225, **G08** 135, **M47** 452, **V31** 202; glaucous creeping herb 30–90 cm tall; damp open sites in the lowlands; Ps, Kd, Kl, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

220.64.12 **Panicum sarmentosum** Roxb., **FMP5** 227, **G08** 139, **V31** 203; scrambling herb; forest margins and scrub in the lowlands and hills; Kd, Kl, Tg, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

220.65.1 **Paspalum conjugatum** Berg., **FMP5** 218, **G08** 180, **D08** 290; stoloniferous herb 40–80 cm tall; grassy places; to 1500 m; throughout; naturalized from the Neotropics.

220.65.2 **Paspalum distichum** L., **D08** 295; stoloniferous herb about 60 cm tall; pantropical weed of damp places; Pn.

220.65.3 **Paspalum longifolium** Roxb., **FMP5** 217, **G08** 182, **D08** 297, **M47** 462; *Paspalum platycoleum* Ridl., **FMP5** 217; tufted herb 50–125 cm tall; damp places; common throughout.

220.65.4 **Paspalum orbiculare** G. Forst., **FMP5** 217, **G08** 184; tufted herb 30–70 cm tall; moist sites; Kd, Pk, Ph, Sl, Ml, Jh, Sp.

220.65.5 **Paspalum scrobiculatum** L. var. **bispicatum** Hack., **G08** 185, **D08** 305; *Paspalum commersonii* Lam., **FMP5** 218, **M47** 456; *Paspalum cartilagineum* Presl, **G08** 184, **M47** 454; herb about 70 cm tall; dry or damp disturbed sites; to 1500 m; throughout.

220.65.6 **Paspalum urvillei** Steud., **D08** 308; tufted herb 90–200 cm tall; waste ground; naturalized from South America.

220.65.7 **Paspalum vaginatum** Sw., **G08** 182, **D08** 309; *Paspalum distichum auct. non* L., **FMP5** 218; stoloniferous herb 25–50 cm tall; open places near the sea; Pn, Pk, Ph, Sl, Jh, Sp.

220.66.1 **Pennisetum clandestinum** Hochst. *ex* Chiov., **G08** 162; creeping herb forming a coarse turf; grassy places in the mountains; Cameron Highlands, Ph; naturalized from Africa.

220.66.2 **Pennisetum polystachion** (L.) Schult., **T05** 130, **C18** 366, **M47** 466; herb to 3 m tall; waste places; Sp; naturalized from tropical Africa.

220.66.3 **Pennisetum purpureum** Schumach., **G08** 162; herb to 3 m tall; pastures and waste places; Sl, NS, Jh, Sp; naturalized from Africa.

220.67.1 **Perotis indica** (L.) Kuntze, **G08** 113, **V36** 610; *Perotis latifolia* Aiton, **FMP5** 243; tufted herb to 75 cm tall; sandy ground near the sea; throughout.

220.68.1 **Phragmites vallatoria** (Pluk. *ex* L.) Veldkamp, **V29** 233; *Phragmites communis auct. non* Trin., **FMP5** 240; *Phragmites karka* (Retz.) Trin. *ex* Steud., **G08** 49; reed to 3 m tall; margins of rivers and lakes; Ps, Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

220.69.1 **Poa annua** L., **FMP5** 254, **G08** 58; tufted herb to 45 cm tall; cultivated ground at the Hill Stations; Pk, Ph; naturalized from temperate regions.

220.70.1 **Pogonatherum crinitum** (Thunb. *ex* Murr.) Kunth; J.F. Veldkamp *pers. comm.*; *Pogonatherum saccharoideum* P. Beauv., **FMP5** 195; *Pogonatherum paniceum* (Lam.) Hack., **G08** 251; much-branched herb 15–60 cm tall; on banks and rocky places to 1600 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, Sp.

220.71.1 **Polytrias indica** (Houtt.) Veldkamp, **V28** 180; *Eulalia praemorsa* (Nees *ex* Steud.) Stapf *ex* Ridl., **FMP5** 197; *Polytrias amaura* (Büse) Kuntze, **G08** 244, **M47** 468; creeping, much-branched herb 15–40 cm tall; dryish open places, in lawns; Kd, Pn, Sl, Ml, Sp; probably spread from Java.

220.72.1 **Pseudechinolaena polystachya** (Kunth) Stapf, **FMP5** 221, **G08** 204; slender creeping herb to 60 cm tall; lowland forest to 1300 m; Pk, Ph, Sl.

220.73.1 **Pseudoraphis spinescens** (R.Br.) Vickery, **G08** 160; aquatic or semi-aquatic; padi-fields; Kd.

220.74.1 **Racemobambos setifera** Holttum, **H43** 134, **G08** 16, **D39** 676, **W29** 159; slender bamboo; hill forest, on banks of fast-flowing rivers; Gg Angsi, NS; Gg Pulai and near Batu Pahat, Jh; endemic.

220.75.1 **Saccharum arundinaceum** Retz., **FMP5** 193, **G08** 226; reed to 4 m tall; common on river banks; Kd, Tg, Pn, Pk, Ph, Sp.

220.75.2 **Saccharum spontaneum** L., **G08** 224; creeping herb 1–4 m tall; waste land; Pn, Pk, Ph, Sl, Sp.

220.75.3 **Saccharum velutinum** (Holttum) T.A. Cope, **C25** 703; *Spodiopogon velutinus* Holttum, **G08** 228; scrambling herb to 3 m long; mountains at 1800 m; known only from type; Cameron Highlands, Ph; endemic.

220.76.1a **Sacciolepis indica** (L.) Chase var. **indica**, **FMP5** 232, **G08** 152, **M47** 472; *Sacciolepis angusta* (Trin.) Stapf, **FMP5** 232; herb to 50 cm tall; open grassy and swampy places to 1700 m; Pk, Ph, Sl, NS, Ml, Jh, Sp.

220.76.1b **Sacciolepis indica** (L.) Chase var. **turgida** (Ridl.) Gilliland, **G08** 154; *Sacciolepis turgida* Ridl., **FMP5** 231; herb to 40 cm tall; grassy places to 800 m; Ps, Kd, Pn.

220.76.2 **Sacciolepis interrupta** (Willd.) Stapf, **G08** 151, **M47** 474; creeping herb to 50 cm tall; padi-fields; Kd.

220.76.3 **Sacciolepis myosuroides** (R.Br.) A. Camus, **FMP5** 232, **G08** 152, **M47** 476; tufted herb to 75 cm tall; open marshy ground to 1700 m; Pn, Pk, Ph, Sl, Ml, Jh, Sp.

220.77.1 **Schizachyrium brevifolium** (Sw.) Nees *ex* Büse, **FMP5** 210, **G08** 291; slender tufted herb to 75 cm tall; open sandy places in the lowlands; Tg, Pn, Pk, Ph, Ml, Jh.

220.77.2 **Schizachyrium sanguineum** (Retz.) Alston, **G08** 289; *Schizachyrium semiberbe* Nees, **FMP5** 210; tufted herb 50–120 cm tall; sandy places near the sea; Jh, Sp.

220.78.1 **Schizostachyum aciculare** Gamble, **FMP5** 270, **H43** 39, **G08** 40, **W29** 165; small bamboo; open places in the lowlands; Kl, Sl, NS, Ml.

220.78.2 **Schizostachyum gracile** (Munro) Holttum, **H43** 37 incl. var. *erectum* Holttum, **G08** 39, **W29** 169; *Schizostachyum tenue* Gamble, **FMP5** 268; *Schizostachyum chilianthum* Kurz, **FMP5** 269; bamboo to 4 m tall, bending over at the top; forest margins and river banks; Tg, Ph, Sl, NS, Ml, Jh; endemic.

220.78.3 **Schizostachyum grande** Ridl., **FMP5** 271, **H43** 49, **G08** 38, **W29** 171; bamboo to 20 m tall; clearings in hill forest to 1000 m; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic.

220.78.4 **Schizostachyum jaculans** Holttum, **H43** 40, **G08** 39, **W29** 173; bamboo to 7 m tall; lowlands; widespread.

220.78.5 **Schizostachyum latifolium** Gamble, **FMP5** 270, **W29** 174; *Ochlandra ridleyi* Gamble, **FMP5** 272; *Schizostachyum longispiculatum auct. non* Kurz, **FMP5** 270, **H43** 48, **G08** 40; bamboo to 5 m tall; forest-river boundaries in the lowlands; throughout.

220.78.6 **Schizostachyum lengguanii** K.M. Wong, **W29** 176; graceful bamboo 4–6 m tall; lake margins; Tasek Chini, Ph; endemic.

220.78.7 **Schizostachyum terminale** Holttum, **H43** 51, **G08** 38, **W29** 178; slender bamboo clambering 6–10 m tall; swampy lowland forest; Kd, Ph, Sl.

220.78.8 **Schizostachyum zollingeri** Steud., **FMP5** 269, **H43** 42, **G08** 41, **W29** 179; bamboo to 15 m tall; forest edges and clearings; throughout.

220.78.9 **Schizostachyum sp.**, **W29** 181; bamboo 4–7 m tall; lowland forest; once from Ulu Sg Teroh, Ph.

220.79.1 **Setaria barbata** (Lam.) Kunth, **T05** 130, **V30** 375; herb to 1 m tall; waste ground; Sp; naturalized from West Africa.

220.79.2 **Setaria geminata** (Forssk.) Veldkamp, **V30** 377; herb; near the sea; Sl.

220.79.3 **Setaria geniculata** (Lam.) P. Beauv., **G08** 159; rhizomatous herb; lowlands, often on coastal sand dunes; Ps, Kd, Kl, Pn, Pk,.

220.79.4 **Setaria italica** (L.) P. Beauv., **FMP5** 234, **G08** 156, **V30** 377; tufted herb to 150 cm tall; in forest clearings as escape or relic of cultivation; Pk, Ph, Ml, Sp; naturalized from subtropical Eurasia.

220.79.5 **Setaria palmifolia** (Koenig) Stapf, **G08** 157, **V30** 379; *Setaria plicata auct. non* (Lam.) Cooke, **FMP5** 235; tufted herb to 100 cm or more tall; lightly shaded places in lowlands and hills to 1600 m; Ps, Kd, Kl, Pk, Ph, Sl, NS, Jh, Sp.

220.79.6 **Setaria parviflora** (Poir.) Kerguélen, **V30** 379; *Setaria rubiginosa* (Steud.) Miq., **FMP5** 234; *Setaria pallide-fusca* (Schum.) Stapf & C.E. Hubb., **G08** 159; *Setaria pumila* (Poir.) Roem. & Schult.; **C18** 411; tufted herb 25–100 cm tall; weed of dry sites in the lowlands; Pn, Sl, NS, Ml, Jh, Sp.

220.79.7 **Setaria punctata** (Burm.*f.*) Veldkamp, **V30** 381; *Paspalum punctatum* Stapf *ex* Ridl., **FMP5** 218; *Paspalidium punctatum* (Burm.*f.*) A. Camus, **G08** 173; herb to 150 cm tall; open damp sites in the lowlands; Ps, Kd, Sl, Jh.

220.80.1 **Soejatmia ridleyi** (Gamble) K.M. Wong, **W28** 532, **W29** 182; *Bambusa ridleyi* Gamble, **FMP5** 257, **H43** 71, **G08** 21; bamboo to 5 m tall; lowland forest; Ph, Sp; endemic.

220.81.1 **Sorghum propinquum** (Kunth) Hitchc., **G08** 229; *Sorghum affine* [*non* Kuntze] (Presl) A. Camus, **FMP5** 195; stoloniferous herb to 2.5 m tall; riverbanks; Ph, Sp.

220.82.1 **Sphaerocaryum malaccense** (Trin.) Pilg., **G08** 126; *Sphaerocaryum elegans* (Arn. *ex* Steud) Nees *ex* Hook.*f.*, **FMP5** 241; carpet-forming herb to 15 cm tall; forest paths and field edges in lowlands and hills; Tg, Pn, Ph, Sl, Ml, Jh, Sp.

220.83.1 **Spinifex littoreus** (Burm.*f.*) Merr., **G08** 210; *Spinifex squarrosus* L., **FMP5** 236; stiff creeping bushy herb; sandy coasts; Tg, Ph, Jh.

220.84.1a **Sporobolus indicus** (L.) R.Br. var. **flaccidus** (Roem. & Schult.) Veldkamp, **B01** 433; *Sporobolus diandrus* (Retz.) P. Beauv., **FMP5** 244 in part, **G08** 106; densely tufted herb to 90 cm tall; disturbed sites in the lowlands.

220.84.1b **Sporobolus indicus** (L.) R.Br. var. **major** (Büse) Baaijens, **B01** 437; *Sporobolus indicus* sensu Ridl., **FMP5** 244; *Sporobolus diandrus* (Retz.) P. Beauv., **FMP5** 244 in part; *Sporobolus fertilis* (Steud.) Clayton, **G08** 106; densely tufted herb to 90 cm tall; disturbed sites to 1600 m; Kd, Pn, Ph, Sl, NS, Ml, Sp.

220.84.2 **Sporobulus piliferus** (Trin.) Kunth, **FMP5** 244, **G08** 105, **B01** 441; densely tufted herb to 30 cm tall; dry open sites; Ml.

220.84.3 **Sporobulus virginicus** (L.) Kunth, **G08** 108, **B01** 441; tufted herb to 50 cm tall; seashores; Kd, Sp.

220.85.1 **Stenotaphrum helferi** Munro *ex* Hook.*f*., **FMP5** 220, **G08** 205, **S04** 205; creeping herb 20–50 cm long; common near the foot of limestone hills; Kd, Kl, Pn, Pk, Ml.

220.85.2 **Stenotaphrum secundatum** (Walter) Kuntze, **S04** 210; *Stenotaphrum dimidiatum auct. non* (L.) Brongn., **G08** 205; creeping prostrate herb to 30 cm long; open grassy places; Sp; naturalized from southern Africa.

220.86.1 **Themeda arguens** (L.) Hack., **FMP5** 212, **G08** 300; often reddish, tufted herb 20–120 cm tall; open dry places; Kd, Pn, Pk, Sl, NS, Ml, Jh, Sp.

220.86.2 **Themeda arundinacea** (Roxb.) Ridl., **G08** 301; *Themeda subsericans* (Nees) Ridl., **FMP5** 212; herb to 150 cm tall; sandy places in the lowlands; Kl, Pk, Ph.

220.86.3 **Themeda villosa** (Poir.) A. Camus, **FMP5** 212, **G08** 301; clumping herb 2–4 m tall; sandy waste places, riverbanks, seashores; Ps, Kd, Kl, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

220.87.1 **Thuarea involuta** (G. Forst.) R.Br. *ex* Roem. & Schult., **G08** 207; *Thuarea sarmentosa* Pers., **FMP5** 236; creeping herb 5–10 cm tall; sea shores; Kd, Kl, Tg, Pn, Ph, Jh, Sp.

220.88.1 **Thysanolaena latifolia** (Roxb. *ex* Hornem.) Honda, **B01** 451; *Thysanolaena agrostis* Nees, **FMP5** 241; *Thysanolaena maxima* (Roxb.) Kuntze, **G08** 45; tufted reed to 3 m tall; open places to 1300 m; Pn, Pk, Sl, Jh, Sp.

220.89.1 **Tripsacum dactyloides** (L.) L., **G08** 309; densely clumped herb 3–4 m tall; plantations, waste places; Ph, NS, Ml, Sp; ?naturalized from tropical America.

220.89.2 **Tripsacum laxum** Nash, **G08** 308; herb to 3 m tall; plantations; Sl; naturalized from tropical America.

220.90.1 **Urochloa distachya** (L.) T.-Q. Nguyen, **N05** 13; *Brachiaria distachya* (L.) Stapf, **FMP5** 219, **G08** 176; decumbent herb 30–45 cm tall; open places in the lowlands; common throughout.

220.90.2 **Urochloa mutica** (Forssk.) T.-Q. Nguyen, **N05** 13; *Brachiaria mutica* (Forssk.) Stapf, **FMP5** 219, **G08** 178, **M47** 392; long-creeping herb to 2 m tall; damp places in the lowlands; Kd, Pk, Sl, Jh, Sp.

220.90.3 **Urochloa paspaloides** Presl; J.F. Veldkamp *pers. comm.*; *Brachiaria paspaloides* (Presl) C.E. Hubb., **G08** 179, **M47** 394; creeping herb to 75 cm tall; weed of cultivation, waste places, sometimes on limestone; Ps, Kd, Pk, Ph, Sl, Jh, Sp.

220.90.4 **Urochloa pubigera** (Roem. & Schult.) R.D. Webster, **W09** 250; *Brachiaria holotricha* Ohwi, **G08** 176; *Brachiaria pubigera* (Roem. & Schult.) S.T. Blake, **L13** 108; glaucous herb to 100 cm or more tall; Pn.

220.90.5 **Urochloa reptans** (L.) Stapf, **FMP5** 220; *Brachiaria reptans* (L.) Gardn. & C.E. Hubb., **G08** 175, **M47** 396; slender glaucous herb to 30 cm tall; open places in the lowlands; Ph, Jh, Sp.

220.90.6 **Urochloa subquadripara** (Trin.) R.D. Webster, **W09** 252; *Brachiaria miliiformis* (Presl) A. Chase, **L13** 108; decumbent herb to 1.5 m tall; roadsides, waste ground.

220.91.1 **Vetiveria nemoralis** (Balansa) A. Camus, **G08** 231; densely tufted herb to 75 cm tall; rocky places in rivers; Sg Nipah, Tg, and Sg Tahan, Ph.

220.92.2 **Vetiveria zizanioides** (L.) Nash, **G08** 232; *Vetiveria odorata* Virey, **FMP5** 208; rhizomatous herb to 2 m or more tall; waste places; Kd, Pn, Pk, Sl, Sp; naturalized from tropical Africa.

220.93.1 **Zoysia matrella** (L.) Merr., **G08** 109, **G13** 171; *Zoysia pungens* Willd., **FMP5** 243; mat-forming herb to 35 cm tall; sandy shores above high tide line; Tg, Pn, Ph, Sl, NS, Ml, Jh, Sp.

221. HANGUANACEAE

221.1.1 **Hanguana malayana** (Jack) Merr., **FM14** 249; *Susum anthelminthicum* Blume *ex* Roem. & Schult., **FMP4** 369; *Susum malayanum* (Jack) Planch. *ex* Hook.*f*., **FMP4** 369; herb to 2 m tall, terrestrial or aquatic; in lowland and hill forests to 1500 m or in lowland ponds and rivers; widespread.

222. HYDROCHARITACEAE

222.1.1a **Blyxa aubertii** Rich. var. **aubertii**, **FM15** 390, **C24** 9; *Blyxa malayana* Ridl., **FMP4** 3; aquatic of pools, marshes and rice fields; to 1200 m; Pn, Tg, Pk, Jh, Sp.

222.1.1b **Blyxa aubertii** Rich. var. **echinosperma** (C.B. Clarke) C.D.K. Cook & Lüönd, **C24** 14, **M47** 302; *Blyxa echinosperma* (C.B. Clarke) Hook.*f*., **FM15** 391; aquatic herb; pools up to 250 m; Pn.

222.1.2a **Blyxa japonica** (Miq.) Maxim. *ex* Asch. & Gürke var. **alternifolia** (Miq.) C.D.K. Cook & Lüönd, **C24** 25; *Enhydrias angustipetala* Ridl., **FMP4** 2; *Blyxa alternifolia* (Miq.) Hartog, **FM15** 392; aquatic herb; muddy ponds and ditches; Ps, Pk, Ml, Sp.

222.1.2b **Blyxa japonica** (Miq.) Maxim. *ex* Asch. & Gürke var. **japonica**. **FMi5** 393, **C24** 21; *Enhydrias angustipetala* Ridl. var. *latifolia* Ridl., **FMP4** 2; flaccid aquatic herb; stagnant pools; Pk, Ml.

222.2.1 **Enhalus acoroides** (L.*f.*) Royle. **FMi5** 402, **D24** 215; *Enhalus koenigii* Rich., **FMP4** 4; sea grass; growing to depths of 4 m; NS, Sp.

222.3.1 **Halophila beccarii** Asch., **FMi5** 411, **D24** 261; sea grass; only uncovered at extreme low tides; Jh, Sp.

222.3.2 **Halophila minor** (Zoll.) Hartog, **FMi5** 410; *Halophila ovata* Gaud., **D24** 251; sea grass; to depths of 2 m; Sp.

222.3.3 **Halophila ovalis** (R.Br.) Hook.*f.*, **FMi5** 408, **D24** 240; *Halophila ovata* (*non* Gaudich.) Ridl., **FMP4** 4; sea grass; to at least 10 m underwater; Kd, Pk, Sp.

222.3.4 **Halophila spinulosa** (R.Br.) Asch., **FMi5** 412, **D24** 263; sea grass; down to 15 m; Jh, Sp.

222.4.1 **Hydrilla verticillata** (L.*f.*) Royle, **FMP4** 1, **FMi5** 385, **M47** 304; aquatic herb; rivers, ditches and pools; widespread.

222.5.1 **Najas indica** (Willd.) Cham., **FMi6** 166; *Najas kingii* Rendle, **FMP4** 366; *Najas minor* (*non* All.) Hook.*f.*, **FMP4** 366; aquatic herb to 40 cm long; rivers, streams, ditches etc.; scattered.

222.5.2 **Najas malesiana** W.J. de Wilde, **FMi6** 169, **M47** 364; *Najas graminea* (*non* Delile) Ridl., **FMP4** 365 incl. var. *angustifolia* Rendle; aquatic herb to 15 cm long; lowland forest streams and pools; widespread.

222.6.1 **Ottelia alismoides** (L.) Pers., **FMP4** 3, **FMi5** 398, **M47** 306; aquatic herb; lowland ponds and sluggish streams.

222.7.1 **Thalassia hemprichii** (Ehrenb.) Asch., **FMi5** 406, **D24** 232; sea grass; commonly on coral sand; Jh, Sp.

223. HYPOXIDACEAE

223.1.1 **Hypoxis aurea** Lour., **FMP4** 298, **FMi11** 370; hairy herb to 30 cm tall; sandy grassy spots; north and east of Malaya.

223.2.1 **Molineria capitulata** (Lour.) Herb., **B04** 209; *Curculigo recurvata* Dryand., **FMP4** 299; *Curculigo capitulata* (Lour.) Kuntze, **FMi11** 367; hairy herb to over 1 m tall; lowland and hill forests; widespread.

223.2.2a **Molineria latifolia** (Dryand.) Herb. *ex* Kurz var. **latifolia**, **B04** 209; *Curculigo latifolia* Dryand., **FMP4** 300 incl. var. *glabrescens* Ridl., **FMi11** 369; *Curculigo villosa* Wall. *ex* Kurz, **FMP4** 300; hairy herb to over 1 m tall; forests and forest margins, lowlands to mountain tops; throughout.

223.2.2b **Molineria latifolia** (Dryand.) Herb. *ex* Kurz var. **megacarpa** (Ridl.) I.M. Turner, **T24** 222; *Curculigo megacarpa* Ridl., **FMP4** 300; *Curculigo latifolia* Dryand. var. *megacarpa* (Ridl.) Geerinck, **FMi11** 369; tufted herb; lower montane forest; Taiping Hills, Pk.

224. IRIDACEAE

224.1.1 **Trimezia martinicensis** (Jacq.) Herb., **T18** 110, **C26** 663; bulbous herb to 60 cm tall; grassy places; widespread; naturalized from the Caribbean.

225. JOINVILLEACEAE

225.1.1 **Joinvillea ascendens** Brongn. & Gris ssp. **borneensis** (Becc.) Newell, **S52** 225; *Joinvillea malayana* Ridl., **FMP4** 368; *Joinvillea borneensis* Becc., **FMi4** 245; clumped reed-like herb 1.5–4.5 m tall; dry open spots in the hills; widespread.

226. JUNCACEAE

226.1.1 **Juncus prismatocarpus** R.Br., **K13** 91; herb; damp waste ground in the mountains; Cameron Highlands, Ph; dubiously native.

227. LEMNACEAE

227.1.1 **Lemna perpusilla** Torr., **FMi7** 230; *Lemna paucicostata* Hegelm., **FMP5** 132; tiny floating single-rooted plant about 4 mm across; still water bodies; widespread.

227.1.2 **Lemna tenera** Kurz, **FMP5** 132, **FMi7** 235; tiny submerged single-rooted aquatic herb to 7 mm long; ditches, ponds and rice-fields; Pn, Pk, Sp.

227.2.1 **Spirodela polyrhiza** (L.) Schleid., **FMi7** 224; *Lemna polyrhiza* L., **FMP5** 132; tiny floating many-rooted plant about 8 mm across; still water bodies; widespread.

227.2.2 **Spirodela punctata** (G. Mey.) C.H. Thomps., **FMi7** 225; tiny floating few-rooted plant about 4 mm across; still water bodies; Ph.

227.3.1 **Wolffia globosa** (Roxb.) Hartog & Plas, **FMi7** 236; *Wolffia arrhiza* [*non* (L.) Horkel *ex* Wimm.] G. Martens, **FMP5** 132; miniscule floating rootless plant barely 1 mm in diameter; stagnant pools and ditches; Sl, Ml, Sp.

228. LIMNOCHARITACEAE

228.1.1 **Limnocharis flava** (L.) Buchenau, **FMi5** 120, **M47** 118; herb to 1 m tall; shallow water, rice-fields; widespread; naturalized from tropical America.

229. LOWIACEAE

229.1.1 **Orchidantha fimbriata** Holttum, **H46** 243, **FMi12** 769; *Orchidantha longiflora* sensu Ridl., **FMP4** 292; herb to 100 cm; lowland and hill forest; Tg, Pk, Ph, Sl, Jh; endemic.

229.1.2 **Orchidantha longiflora** (Scort.) Ridl., **H46** 245, **FMi12** 772; *Orchidantha calcarea* M.R. Hend., **H33** 125; herb about 50 cm tall; lowland forest; Pk, Sl; endemic.

229.1.3 **Orchidantha maxillarioides** (Ridl.) K. Schum., **FMP4** 293, **H46** 245, **FMi12** 772; herb to about 30 cm; lowland forest; Ph; endemic.

230. MARANTACEAE

230.1.1 **Donax grandis** (Miq.) Ridl., **FMP4** 286, **H42** 268; lowland forest herb to 5 m tall; widespread.

230.1.2 **Donax parviflorus** Ridl., **FMP4** 287 '*parviflorum*', **H42** 270; forest herb; Kl, Pk, Ph, Sl.

230.2.1 **Phacelophrynium maximum** (Blume) K. Schum., **H42** 295; *Phacelophrynium tapirorum* K. Schum., **FMP4** 289; forest herb; wet ground near streams; Tg, Ph, Sl, Jh.

230.3.1 **Phrynium gracile** Holttum, **H42** 282; herb; known only from Jh.

230.3.2 **Phrynium hirtum** Ridl., **FMP4** 289, **H42** 290; herb; lowland and hill forest; Tg, Pk, Sl, NS, Jh.

230.3.3 **Phrynium parvum** (Ridl.) Holttum, **H42** 283; *Stachyphrynium parvum* Ridl., **FMP4** 288; herb; lowland forest; Jh, Sp.

230.3.4 **Phrynium pubinerve** Blume, **T19** 129; *Phrynium malaccense* Ridl., **FMP4** 290; *Phrynium capitatum* Willd., *nom. illeg.*, **H42** 287; lowland and hill forest herb; widespread.

230.3.5 **Phrynium terminale** Ridl., **FMP4** 290, **H42** 293; herb to 1 m tall; lowland forest; Kd, Pk; endemic.

230.3.6 **Phrynium tristachyum** Ridl., **FMP4** 290, **H42** 286, **K11** 728; herb; forest; Sl, NS, Jh.

230.3.7 **Phrynium villosulum** Miq., **K11** 728; *Phrynium basiflorum* Ridl., **FMP4** 289, **H42** 292; herb; swampy lowland forest; Pk, NS, Jh, Sp.

230.3.8 **Phrynium sp., H42** 282; forest herb; Tg.

230.4.1 **Schumannianthus dichotomus** (Roxb.) Gagnep., **H42** 272; *Donax arundastrum* (*non* Lour.) Schum., **FMP4** 286; herb to 2.5 m tall; forming thickets in wet forest.

230.5.1 **Stachyphrynium cylindricum** (Ridl.) K. Schum., **FMP4** 287, **H42** 278, **C16** 40; tufted herb; limestone; Kd, Kl, Pk.

230.5.2 **Stachyphrynium griffithii** (Baker) K. Schum., **FMP4** 287, **H42** 276; herb; lowland forest; Pk/Ph southward; endemic.

230.5.3 **Stachyphrynium jagorianum** (K. Koch) K. Schum., **FMP4** 288, **H42** 274; herb of partial shade; Tg, Pn, Pk, Ph, Sl, NS.

230.5.4 **Stachyphrynium sp., H42** 275; one coll. Temango, Pk.

231. MELANTHIACEAE

231.1.1 **Petrosavia stellaris** Becc., **FMi9** 199; *Protolirion paradoxum* Ridl., **FMP4** 322; rhizomatous yellow saprophytic herb to 11 cm tall; dry spots in lower montane forest; Kd, Pk, Ph.

232. MUSACEAE

232.1.1a **Musa acuminata** Colla ssp. **malaccensis** (Ridl.) N.W. Simmonds, **S77** 466, **H52** 68; *Musa malaccensis* Ridl., **FMP4** 294 including var. *minor* Ridl.; *Musa flava* Ridl., **FMP4** 294; banana to 6 m tall; lowland to lower montane forest; Ps, Kd, Kl, Tg, Pn, Ph, Ml.

232.1.1b **Musa acuminata** Colla ssp. **microcarpa** (Becc.) N.W. Simmonds, **S77** 467; *Musa truncata* Ridl., **FMP4** 294; banana to 6 m tall; commoner in the mountains; Kd, Tg, Ph, Sl.

232.1.1c **Musa acuminata** Colla ssp. **siamea** N.W. Simmonds, **S77** 466; banana to 6 m tall; lowlands and hills; Ps, Kd, Kl.

232.1.2 **Musa gracilis** Holttum; **S77** 488, **K28** 239; **H52** 72; slender banana to 2 m tall; lowland forest; Kl, Tg, Ph, Ml, Jh.

232.1.3 **Musa violascens** Ridl.; **FMP4** 294, **S77** 487; slender banana to 3 m tall; lowland and hill forest; Pk, Ph, Sl, NS; endemic.

233. ORCHIDACEAE

233.1.1 **Abdominea minimiflora** (Hook.*f.*) J.J.Sm., **H44** 640, **S20** 590; *Saccolabium minimiflorum* Hook.*f.* **FMP4** 166; tiny epiphyte; hill and montane forest; Pk, Ph, Sl.

233.2.1 **Acampe rigida** (Buch.-Ham. *ex* Sm.) P.F. Hunt, **S20** 590; *Acampe penangiana* Ridl., **FMP4** 155; *Acampe longifolia* (Lindl.) Lindl., **H44** 625; herb of exposed places; P. Langkawi, Pg.

233.3.1 **Acanthephippium javanicum** Blume, **FMP4** 116, **H44** 148, **S20** 157; herb to about 45 cm tall; hill forest; about 600 m; Pn, Ph, NS.

233.3.2 **Acanthephippium striatum** Lindl., **H44** 148, **S20** 157; herb to about 45 cm tall; one doubtful collection; Fraser's Hill, Ph.

233.3.3 **Acanthephippium sylhetense** Lindl., **H44** 148, **S20** 157; herb to about 45 cm tall; one doubtful collection; Cameron Highlands, Ph.

233.4.1 **Acriopsis carrii** Holttum, **H44** 557, **S20** 566; epiphyte to 40 cm tall; on epiphytic ferns in limestone forest or river side trees; Kl, Tg; Endemic.

233.4.2 **Acriopsis densiflora** Lindl., **H44** 555, **S20** 563; *Acriopsis purpurea* Ridl., **FMP4** 191; epiphyte about 10 cm tall; collected once; Pekan, Ph.

233.4.3 **Acriopsis indica** Wight, **FMP4** 190, **H44** 557, **S20** 566; epiphyte; hill and montane forest; Kd, Kl, Pn, Ph.

233.4.4 **Acriopsis liliiflora** (Koenig) Ormerod, **S19 58**; *Acriopsis javanica* Reinw. *ex* Blume, **FMP4** 190, **H44** 555, **S20** 563; epiphyte to 40 cm tall; on trees in open places; common in lowlands throughout.

233.4.5 **Acriopsis ridleyi** Hook.*f.*, **FMP4** 190, **H44** 556, **S20** 563; epiphyte to 30 cm tall; lowland and montane forest; Ph, Jh, Sp.

233.5.1 **Adenoncos major** Ridl., **FMP4** 154, **H44** 597, **S20** 583; epiphyte to 30 cm tall; lowland forest to 500 m; commonest in the south.

233.5.2 **Adenoncos parviflora** Ridl., **FMP4** 154, **H44** 598, **S20** 583; epiphyte to 15 cm long; lowland forest; Sl.

233.5.3 **Adenoncos vesiculosa** Carr, **H44** 598, **S20** 583; epiphyte to 15 cm long; montane forest; Ph, Sl.

233.5.4 **Adenoncos sumatrana** J.J.Sm, **H44** 593, **S20** 583; *Adenoncos virens* (*non* Blume) Ridl., **FMP4** 154; epiphyte to 15 cm long; lowlands and mountains to 1350 m; widespread.

233.6.1 **Aerides krabiensis** Seidenf., **S20** 673; *Aerides multiflora auct. non* Roxb., **FMP4** 183, **H44** 700; tufted herb; on exposed limestone rocks; Kd, P. Langkawi.

233.6.2 **Aerides odorata** Lour.; **FMP4** 182, **H44** 698, **S20** 673; lowland epiphyte; common on trees near the sea.

233.7.1 **Agrostophyllum bicuspidatum** J.J.Sm., **FMP4** 108 in part, **H44** 487, **S20** 319; epiphyte to 40 cm long; lowland and montane forest; rather common.

233.7.2 **Agrostophyllum cyathiforme** J.J.Sm, **H44** 487, **S20** 324; epiphyte to 50 cm long; montane forest; Kd, Ph.

233.7.3 **Agrostophyllum elongatum** (Ridl.) Schuit., **S20** 321; *Agrostophyllum hasseltii* (Blume) J.J.Sm., **FMP4** 108, **H44** 488; epiphyte/epilith to 120 cm long; on rocks or riverside trees; lowlands and highlands.

233.7.4 **Agrostophyllum glumaceum** Hook.*f.*, **FMP4** 108, **H44** 489, **S20** 321; epiphyte to 20 cm long; on trees by streams; lowlands and mountains; widespread.

233.7.5 **Agrostophyllum longifolium** (Blume) Rchb.*f.*, **H44** 485, **S20** 321; large epiphyte; montane forest; Cameron Highlands, Ph.

233.7.6 **Agrostophyllum majus** Hook.*f.*, **FMP4** 107, **H44** 489, **S20** 321; epiphyte to 100 cm long; lowlands and mountains on exposed trees; widespread.

233.7.7 **Agrostophyllum stipulatum** (Griff.) Schltr., **S20** 319; *Agrostophyllum bicuspidatum* (*non* J.J.Sm.) Ridl., **FMP4** 108 in part; epiphyte to 40 cm long; lowlands and mountains; Kd, Pn, Sp.

233.7.8 **Agrostophyllum tenue** J.J.Sm., **H44** 491, **S20** 324; epiphyte to 60 cm long; montane forest; Ph, Pk, Sl.

233.8.1 **Ainia penangiana** (Hook.*f.*) Summerh., **T17** 55; *Ascotainia penangiana* Ridl., **FMP4** 112; *Tainia penangiana* Hook.*f.*, **H44** 182, **S20** 156; herb to 75 cm tall; grassy places in the hills; Kd, Pn, Pk.

233.9.1 **Anoectochilus albolineatus** C.S.P. Parish & Rchb.*f.*, **FMP4** 213, **H44** 127, **S20** 73; *Anoectochilus reinwardtii* (*non* Blume) Ridl., **FMP4** 213; herb to 12 cm tall; montane forests at 1200–1700 m; widespread.

233.9.2 **Anoectochilus brevistylus** (Hook.*f.*) Ridl., **S20** 76, **H44** 128, **FMP4** 214; herb to 30 cm tall; montane forest; Pk, Ph.

233.9.3 **Aneoctochilus burmannicus** Rolfe, **S20** 73; herb about 4 cm tall; montane forest; only known from Gg Ledang, Jh.

233.9.4 **Anoectochilus calcaratus** (Hook.*f.*) Ridl., **FMP4** 214, **H44** 128, **S20** 75; herb about 7 cm tall; hill forest about 1000 m; Pk, Ph.

233.9.5 **Anoectochilus geniculatus** Ridl., **FMP4** 213, **H44** 127, **S20** 73; herb to about 15 cm tall; lowland and hill forest to 900 m; Pn southwards.

233.9.6 **Anoectochilus pectinatus** (Hook.*f.*) Ridl., **FMP4** 214, **H44** 129, **S20** 76; herb to 20 cm tall; montane forest about 1000 m; only known from Gg Hijau, Pk; endemic.

233.9.7 **Anoectochilus pomrangianus** Seidenf., **S20** 75; *Zeuxine abbreviata* Hook.*f.*, **H44** 133; herb to 13 cm tall; montane forest; once collected at the Cameron Highlands, Ph.

233.9.8 **Anoectochilus repens** (Downie) Seidenf. & Smitinand, **S20** 75; *Anoectochilus duplex* Holttum, **H44** 128; herb about 10 cm tall; montane forest; Ph.

233.10.1 **Aphyllorchis montana** Rchb.*f.*, **S20** 45; *Aphyllorchis prainii* Hook.*f.*, **H44** 102; saprophytic herb to 1 m tall; montane forest; found once in the Cameron Highlands, Ph.

233.10.2 **Aphyllorchis pallida** Blume, **FMP4** 205, **H44** 102, **S20** 44; saprophytic herb to 50 cm tall; lowland forest; widespread.

233.10.3 **Aphyllorchis striata** (Ridl.) Ridl., **FMP4** 205, **H44** 102, **S20** 45; saprophytic herb to 1 m tall; lowland forest; Kl, Ph, Jh.

233.11.1 **Apostasia elliptica** J.J.Sm., **S20** 37; herb to 35 cm tall; montane forest; only known from Gg Korbu, Pk.

233.11.2 **Apostasia latifolia** Rolfe, **FMP4** 297, **H44** 66, **S20** 37; herb to 50 cm tall; hill and montane forest; Pk, Ph, Ml; endemic.

233.11.3 **Apostasia nuda** R.Br., **FMP4** 297, **H44** 66, **S20** 37; herb to 50 cm tall; lowland and hill forest to 900 m; widespread.

233.11.4 **Apostasia odorata** Blume, **S20** 35; *Apostasia platystylis* J.J.Sm., **H44** 66; herb; lowland forest; Kd, Ph.

233.11.5 **Apostasia wallichii** R.Br., **FMP4** 297, **H44** 65, **S20** 35; herb about 25 cm tall; lowland forest to 600 m; scattered localities.

233.12.1 **Appendicula anceps** Blume, **FMP4** 195, **H44** 505, **S20** 329; epiphyte to 45 cm long; lowland and hill forest to 1050 m; widespread common.

233.12.2 **Appendicula cornuta** Blume, **FMP4** 196, **H44** 509, **S20** 332; epiphyte to 50 cm long; lowland forests; common.

233.12.3 **Appendicula densifolia** (Ridl.) Ridl., **FMP4** 197, **H44** 507, **S20** 329; epiphyte to 35 cm long; on trees by rivers; Tg, Ph, Sl, Jh; endemic.

233.12.4 **Appendicula lucida** Ridl., **FMP4** 196, **H44** 509, **S20** 330; epiphyte to 25 cm long; mostly on riverside trees; south of Malaya.

233.12.5 **Appendicula ovalis** (Schltr.) J.J.Sm., **H44** 504, **S20** 325; *Appendicula purpurascens* (*non* Blume) Ridl., **FMP4** 195 in part; pendulous epiphyte to 60 cm long; montane forest; not uncommon.

233.11.6a **Appendicula pendula** Blume var. **latibracteata** (J.J.Sm.) Holttum, **S20** 327; pendulous epiphyte to 2 m long; on trees by rivers; Ph, Jh.

233.12.6b **Appendicula pendula** Blume var. **pendula**, **FMP4** 198, **H44** 504, **S20** 327; *Appendicula lancifolia* Hook.*f.*, **FMP4** 198; pendulous epiphyte to 2 m long; lowland and montane forest; fairly common.

233.12.7 **Appendicula reflexa** Blume, **FMP4** 197, **H44** 507, **S20** 330; *Appendicula robusta* Ridl., **FMP4** 197; epiphyte to 60 cm long; lowland and montane forest; Kd, Pk, Ph, Jh.

233.12.8 **Appendicula rupestris** Ridl., **FMP4** 197, **H44** 507, **S20** 329; erect herb about 25 cm tall; rheophyte of mountain streams; Pk, Ph; endemic.

233.12.9 **Appendicula torta** Blume, **FMP4** 198, **H44** 505 incl. var. *alba* J.J.Sm., **S20** 327; epiphyte to 25 cm long; hill forest; Kl, Pk, Sl.

233.12.10 **Appendicula uncata** Ridl., **FMP4** 196, **H44** 508, **S20** 330; epiphyte to 40 cm long; lowland forests; south of Peninsula.

233.12.11 **Appendicula undulata** Blume, **H44** 505, **S20** 329; *Appendicula purpurascens* (*non* Blume) Ridl., **FMP4** 195 in part; epiphyte to 80 cm long; on riverside trees, also on limestone rocks (Ph).

233.13.1 **Arachnis flosaeris** (L.) Rchb.*f.*, **H44** 616 incl. var. *gracilis* Holttum, **S20** 633; *Arachnis moschifera* Blume, **FMP4** 159; scrambler on limestone rocks, or mangrove epiphyte; Pk, Ph, Sl, NS.

233.13.2 **Arachnis hookeriana** (Rchb.*f.*) Rchb.*f.*, **H44** 614, **S20** 633; *Arachnis alba* (Ridl.) Schltr., **FMP4** 159; scrambler; in scrub near the seashore; commonest along east coast.

233.13.3 **Arachnis maingayi** (Hook.*f.*) Schltr., **FMP4** 159, **H44** 618, **S20** 634; scandent herb; usually near the sea; south of the Peninsula.

233.14.1 **Arundina graminifolia** (D. Don) Hochr., **H44** 188, **S20** 146; *Arundina bambusifolia* Lindl., **FMP4** 125; *Arundina revoluta* Hook.*f*., **FMP4** 126; *Arundina speciosa* Blume; **FMP4** 126; sedge-like herb to over 2 m tall; open sunny places in lowlands and mountains; widespread.

233.15.1 **Ascidieria longifolia** (Hook.*f*.) Seidenf., **S20** 306; *Eria longifolia* Hook.*f*., **FMP4** 88, **H44** 381; tufted epiphyte about 25 cm long; montane forests above 1300 m; widespread.

233.16.1 **Ascocentrum miniatum** (Lindl.) Schltr., **H44** 735, **S20** 691; *Saccolabium miniatum* Lindl., **FMP4** 172; epiphyte to 25 cm long; on trees; Ps, P. Langkawi.

233.17.1 **Ascochilopsis myosurus** (Ridl.) Carr, **H44** 707, **S20** 660; *Saccolabium myosurus* Ridl., **FMP4** 173; epiphyte to about 10 cm tall; lowlands; Kl, Ph, Sl, Jh.

233.18.1 **Ascochilus fasciculatus** (Carr) Garay, **S20** 665; *Sarcochilus fasciculatus* Carr, **H44** 690; small epiphyte up to 10 cm tall; known only from Krian, Pk; endemic.

233.18.2 **Ascochilus siamensis** Ridl., **FMP4** 181, **S20** 665; *Sarcochilus siamensis* (Ridl.) Carr, **H44** 689; tiny epiphyte a few cm tall; north of Peninsula.

233.19.1 **Biermannia ciliata** (Ridl.) Garay, **S20** 685; *Dendrocolla ciliata* Ridl., **FMP4** 188; *Sarcochilus ciliatus* (Ridl.) J.J.Sm., **H44** 690; small epiphyte about 5 cm tall; lowland forest; Tg, Pk, Ph (one locality each).

233.19.2 **Biermannia flava** (Carr) Garay, **S20** 685; *Chamaeanthus flavus* Carr, **H44** 680; tiny fleshy-leaved epiphyte a few cm tall; lowland forest; Ph; endemic.

233.19.3 **Biermannia laciniata** (Carr) Garay, **S20** 685; *Chamaeanthus laciniatus* Carr, **H44** 680; tiny fleshy-leaved epiphyte a few cm tall; lowland swamp and riverside trees; Ph, Sp; endemic.

233.19.4 **Biermannia sarcanthoides** (Ridl.) Garay, **S20** 686; *Bulbophyllum sarcanthoides* Ridl., **FMP4** 71; *Chamaeanthus sarcanthoides* (Ridl.) Carr, **H44** 680; tiny fleshy-leaved epiphyte a few cm tall; only known from type; Tebrau, Jh; endemic.

233.20.1 **Brachypeza indusiata** (Rchb.*f*.) Garay, **S20** 681; *Sarcochilus stenoglottis* Hook.*f*., **FMP4** 179, **H44** 683; short-stemmed epiphyte; lowland forest; Kl, Pk, Ph.

233.21.1 **Bromheadia alticola** Ridl., **FMP4** 151, **H44** 543, **S20** 525; pendulous bushy epiphyte to 60 cm long; lowland and hill forest to 600 m; widespread.

233.21.2 **Bromheadia aporoides** Rchb.*f*., **S20** 529; tufted epiphyte 6–12 cm tall; lowland forest; Sp.

233.21.3 **Bromheadia borneensis** J.J.Sm., **S20** 525; herb to 75 cm tall; one collection from Jh.

233.21.4 **Bromheadia brevifolia** Ridl., **FMP4** 151, **H44** 545, **S20** 527; epiphyte to 30 cm long; montane forest; Pk, Ph, Sl; endemic.

233.21.5 **Bromheadia finlaysoniana** (Lindl.) Miq., **H44** 541, **S20** 525; *Bromheadia palustris* Lindl., **FMP4** 150; *Bromheadia sylvestris* Ridl., **FMP4** 150; herb occasionally to 2 m tall; lowland secondary forest and scrub; common throughout.

233.21.6 **Bromheadia sp.** (B. pandurata), **S20** 527; herb about 50 cm tall; known only from type; Gg Ledang, Ml; endemic.

233.21.7 **Bromheadia pungens** Ridl., **FMP4** 151, **H44** 545, **S20** 527; epiphyte about 40 cm long; montane forest; Gg Tahan, Ph, and Gg Ledang, Ml; endemic.

233.21.8 **Bromheadia rupestris** Ridl., **FMP4** 150, **H44** 545, **S20** 527; herb to 1.5 m tall; lower montane forest; Gg Jerai, Kd; Gg Tahan, Ph, P. Tioman and Gg Ledang, Ml; endemic.

233.21.9 **Bromheadia scirpoidea** Ridl., **FMP4** 151, **H44** 546, **S20** 529; epiphyte about 20 cm long; lowland forest; widespread but not common.

233.21.10 **Bromheadia truncata** Seidenf., **S20** 529; *Bromheadia aporoides auct. non* Rchb.*f.*, **FMP4** 151, **H44** 545; tufted epiphyte about 10 cm long; lowland and montane forest; widespread.

233.22.1 **Bulbophyllum abbrevilabium** Carr, **H44** 428, **S20**509; epiphyte; on riverside trees; known only from Sg Sat, Ph.

233.22.2 **Bulbophyllum acuminatum** (Ridl.) Ridl., **FMP4** 79, **H44** 414, **S20** 447; *Bulbophyllum stenophyllum* Ridl., **FMP4** 80; creeping epiphyte; on old mangrove and riverside trees; Jh, Sp.

233.22.3 **Bulbophyllum alcicorne** C.S.P. Parish & Rchb.*f.*, **FMP4** 66, **H44** 462, **S20** 497; creeping epiphyte about 10 cm tall; widespread.

233.22.4 **Bulbophyllum angustifolium** (Blume) Lindl., **H44** 454, **S20** 472; *Bulbophyllum capitatum* (*non* Lindl.) Ridl., **FMP4** 70; creeping epiphyte with pendulous branches; montane forest; not uncommon.

233.22.5 **Bulbophyllum annandalei** Ridl., **FMP4** 78, **H44** 408, **S20** 441; epiphyte about 10 cm tall; lower montane forest; about 1000 m; only known from the Genting Highlands, Sl.

233.22.6 **Bulbophyllum apodum** Hook.*f.*, **FMP4** 73, **H44** 446, **S20** 463; *Bulbophyllum vaginulosum* Carr, **H44** 447; epiphyte; lowland and montane forest; south of Peninsula.

233.22.7 **Bulbophyllum armeniacum** J.J.Sm., **H44** 449, **S20** 459; epiphyte about 30 cm tall; montane forest; Tg, Ph.

233.22.8 **Bulbophyllum bakhuizenii** Steenis, **S20** 471; *Bulbophyllum multiflorum* [*non* Ridl.] (Breda) Kraenzl., **H44** 454; long-creeping epiphyte; Kd, Pk, Ph.

233.22.9 **Bulbophyllum biflorum** Teijsm. & Binn., **H44** 407, **S20** 451; epiphyte; montane forest; Ph, Sl.

233.22.10 **Bulbophyllum biseriale** Carr, **H44** 435, **S20** 512; epiphyte; montane forest; about 1800 m; only known from G. Tahan, Ph.

233.22.11 **Bulbophyllum blepharistes** Rchb.*f*, **S20** 432; epiphyte; one old collection from Pn.

233.22.12 **Bulbophyllum blumei** (Lindl.) J.J.Sm., **FMP4** 74, **H44** 406, **S20** 517; creeping epiphyte; on mangrove and riverside trees; south of Malaya.

233.22.13 **Bulbophyllum botryophorum** Ridl., **FMP4** 69, **H44** 457, **S20** 494; creeping epiphyte; on mangrove and riverside trees; Ph, Jh, Sp.

233.22.14 **Bulbophyllum brevipes** Ridl., **FMP4** 70, **H44** 453, **S20** 471; creeping epiphyte; montane forest; about 1300 m; Gg Bujang Melaka, Pk and Fraser's Hill, Ph.

233.22.15 **Bulbophyllum catenarium** Ridl., **FMP4** 61 in part, **S20** 512; *Bulbophyllum carunculaelabrum* Carr, **H44** 435; epiphyte; Tg, Sl, Jh.

233.22.16 **Bulbophyllum caudatisepalum** Ames & Schweinf., **S20** 459; epiphyte; one old collection; Kluang Terbang, Ph.

233.22.17 **Bulbophyllum cheiri** Lindl., **S20** 479; *Bulbophyllum megalanthum* Griff., **FMP4** 57, **H44** 416; epiphyte; on trees near the sea; Tg, Ml.

233.22.18 **Bulbophyllum cheiropetalum** Ridl., **H44** 428, **S20** 507; epiphyte; montane forest; Kd, Ph, Sl.

233.22.19 **Bulbophyllum cleistogamum** Ridl., **FMP4** 69, **H44** 401, **S20** 493; epiphyte; usually in the lowlands; Kd, Pn, Pk, Sl, Jh, Sp.

233.22.20 **Bulbophyllum comberi** J.J. Verm., **S20** 519; *Bulbophyllum ciliatum* [*non* (Blume) Lindl.] Holttum, **H44** 439; epiphyte; montane forest; collected once at Cameron Highlands, Ph.

233.22.21 **Bulbophyllum concinnum** Hook.*f*., **FMP4** 70, **H44** 454, **S20** 471; epiphyte; on mangrove and riverside trees; Jh, Sp.

233.22.22 **Bulbophyllum coniferum** Ridl., **FMP4** 67, **H44** 462, **S20** 497; *Bulbophyllum musciferum* Ridl., **FMP4** 66, **H44** 462; epiphyte; montane forest; Kd, Ph.

233.22.23 **Bulbophyllum crassipes** Hook.*f*., **S20** 488; epiphyte; one old and possibly wrongly localised collection from Pn.

233.22.24 **Bulbophyllum cupreum** Lindl., **S20** 488; epiphyte; poorly known species possibly native to Malaya.

233.22.25 **Bulbophyllum cuspidipetalum** J.J.Sm., **H44** 424, **S20** 485; epiphyte; montane forest; once collected on Gg Panti, Jh.

233.22.26 **Bulbophyllum dearei** (Hort.) Rchb.*f*, **S20** 481; *Bulbophyllum reticosum* Ridl., **H44** 420; epiphyte; montane forest; Gg Belumut and Gg Pulai, Jh.

233.22.27 **Bulbophyllum dentiferum** Ridl., **S20** 443; *Bulbophyllum cyclosepalon* Carr, **H44** 410; creeping epiphyte; Kl, Pk, Ph.

233.22.28 **Bulbophyllum diplantherum** Carr, **H44** 453, **S20** 468; creeping epiphyte; Ph, Sl; endemic.

233.22.29 **Bulbophyllum dryas** Ridl., **FMP4** 62, **H44** 437, **S20** 461; epiphyte; on exposed trees on mountains at 1300–1500 m; Ph.

233.22.30 **Bulbophyllum elongatum** (Blume) Hassk., **H44** 459, **S20** 499; *Bulbophyllum gigas* Ridl., **FMP4** 67; large epiphyte or epilith; montane forest, often near streams, at 1200–1500 m; Pk, Ph.

233.22.31 **Bulbophyllum evansii** M.R. Hend., **H44** 421, **S20** 479; epiphte; montane forest above 2000 m; Gg Brinchang and Gg Benom, Ph; endemic.

233.22.32 **Bulbophyllum flammuliferum** Ridl., **FMP4** 74, **H44** 451, **S20** 465; creeping herb; on limestone rocks; Kl, Ph, Sl.

233.22.33 **Bulbophyllum flavescens** (Blume) Lindl., **S20** 459; *Bulbophyllum adenopetalum* Lindl., **FMP4** 71, **H44** 449; *Bulbophyllum montigenum* Ridl., **FMP4** 72; epiphyte; lowland and montane forest; widespread.

233.22.34 **Bulbophyllum foetidolens** Carr, **H44** 460, **S20** 487; epiphyte; hill forest at about 1000 m; only known from Gg Tahan, Ph.

233.22.35 **Bulbophyllum gibbosum** (Blume) Lindl., **H44** 448, **S20** 463; *Bulbophyllum selangorense* Ridl., **FMP4** 73, **H44** 448; epiphyte; montane forest; Main Range.

233.22.36 **Bulbophyllum globulus** Hook.*f*., **FMP4** 73, **H44** 451, **S20** 465; epiphyte; known only from type; Pk; endemic.

233.22.37 **Bulbophyllum gracillimum** (Rolfe) Rolfe, **H44** 408, **S20** 439; *Bulbophyllum psittacoides* (Ridl.) J.J.Sm., **FMP4** 76; epiphyte; lowland forest; not uncommon.

233.22.38 **Bulbophyllum grudense** J.J.Sm., **S20** 521; *Bulbophyllum oeneum* Burkill *ex* Ridl., **FMP4** 63, **H44** 439; epiphyte; montane forest; Ph, Sl.

233.22.39 **Bulbophyllum haniffii** Carr, **H44** 428, **S20** 507; epiphyte; only known from Pulau Tikus, Pg.

233.22.40 **Bulbophyllum hirtulum** Ridl., **FMP4** 65, **H44** 443, **S20** 435; *Bulbophyllum cincinnatum* Ridl., **FMP4** 65, **H44** 443; *Bulbophyllum trichoglottis* Ridl., **FMP4** 67, **H44** 443; epiphyte; montane forest; Pn, Pk, Ph.

233.22.41 **Bulbophyllum hispidum** Ridl., **FMP4** 61, **H44** 457, **S19** 40; *Bulbophyllum dayanum auct. non* Rchb.*f.*, **S20** 435; epiphyte; montane forest at 1200 m; collected once on Gg Jerai, Kd.

233.22.42 **Bulbophyllum hodgsonii** M.R. Hend., **H44** 433, **S20** 511; epiphyte; montane forest; only known from Robinson's Falls, Ph; endemic.

233.22.43 **Bulbophyllum holttumii** A.D. Hawkes, **H44** 462, **S20** 499; *Bulbophyllum apiferum* (*non* Schltr.) Carr; epiphyte; montane forest; Gg Tahan and Gg Brinchang, Ph; endemic.

233.22.44 **Bulbophyllum ignevenosum** Carr, **H44** 435, **S20** 512; epiphyte; montane forest; knwon only from Gg Tahan at 1600 m.

233.22.45 **Bulbophyllum inunctum** J.J.Sm., **S20** 475; *Bulbophyllum longiflorum* (*non* Thouars.) Ridl., **FMP4** 59, **H44** 421; epiphyte; hill forest; Kd, Pn.

233.22.46 **Bulbophyllum korthalsii** Schltr., **S20** 461; *Bulbophyllum arachnites* Ridl., **FMP4** 73, **H44** 448; epiphyte; montane forest; collected once at the Cameron Highlands, Ph.

233.22.47 **Bulbophyllum lasianthum** Lindl., **FMP4** 65, **H44** 463, **S20** 483; epiphyte and epilith; on lowland trees and rocks in moist shady places; throughout.

233.22.48 **Bulbophyllum lasiochilum** C.S.P. Parish & Rchb.*f.*, **S20** 451; *Bulbophyllum breviscapum* (Rolfe) Ridl., **FMP4** 74, **H44** 407; epiphyte; one doubtful record; Pk.

233.22.49 **Bulbophyllum laxiflorum** (Blume) Lindl., **H44** 452, **S20** 468; creeping epiphyte; widespread.

233.22.50 **Bulbophyllum leptosepalum** Hook.*f.*, **FMP4** 72, **H44** 449, **S20** 461; epiphyte; lowland and hill forest; widespread; endemic.

233.22.51 **Bulbophyllum lilacinum** Ridl., **FMP4** 68, **H44** 460, **S20** 491; epiphyte; P. Langkawi and Gg Jerai, Kd.

233.22.52 **Bulbophyllum limbatum** Lindl., **FMP4** 65, **H44** 460, **S20** 435; epiphyte; Jh, Sp.

233.22.53 **Bulbophyllum linearifolium** King & Pantl., **FMP4** 72, **H44** 448, **S20** 463; epiphyte; montane forest; Kd, Pk, Ph, Sl; endemic.

233.22.54 **Bulbophyllum lobbii** Lindl., **H44** 424, **S20** 481; *Bulbophyllum polystictum* (*non* Schltr.) Ridl., **FMP4** 59, **H44** 424; *Bulbophyllum siamense* Rchb.*f*, **FMP4** 60; epiphyte; montane forest; widespread.

233.22.55 **Bulbophyllum lumbriciforme** J.J.Sm., **H44** 400, **S20** 493; epiphyte; montane forest; Gg Jerai, Kd and Gg Tahan, Ph.

233.22.56 **Bulbophyllum macranthum** Lindl., **FMP4** 57, **H44** 417, **S20** 477; creeping epiphyte; on lowland trees; widespread.

233.22.57 **Bulbophyllum macrochilum** Rolfe, **S20** 493; *Bulbophyllum stella* Ridl., **FMP4** 69, **H44** 401; epiphyte; lowland forest; Jh, Sp.

233.22.58 **Bulbophyllum malleolabrum** Carr, **H44** 434, **S20** 512; epiphyte; montane forest; about 1500 m; known only from Cameron Highlands, Ph.

233.22.59 **Bulbophyllum medusae** (Lindl.) Rchb.*f*., **FMP4** 75, **H44** 409, **S20** 468; epiphyte and epilith; lowland forest; widespread.

233.22.60 **Bulbophyllum membranaceum** Teijsm. & Binn., **FMP4** 64, **H44** 430, **S20** 501; creeping epiphyte; lowland and hill forests; widespread.

233.22.61 **Bulbophyllum membranifolium** Hook.*f*., **FMP4** 60, **H44** 420, **S20** 475; epiphyte; montane forest at about 1300 m; Ph, Sl, Jh.

233.22.62 **Bulbophyllum microglossum** Ridl., **FMP4** 60, **H44** 421, **S20** 483; small epiphyte; montane forest; Ph.

233.22.63 **Bulbophyllum minutulum** Ridl.; **FMP4** 62, **H44** 433, **S20** 511; ? terrestrial; montane forest; Fraser's Hill, Ph and Gg Ulu Kali, Sl.

233.22.64 **Bulbophyllum mobilifilum** Carr, **H44** 428, **S20** 507; epiphyte; on lowland trees; collected twice, Ph; endemic.

233.22.65 **Bulbophyllum modestum** Hook.*f*., **FMP4** 71, **H44** 453, **S20** 468; *Bulbophyllum ochranthum* Ridl., **FMP4** 71; *Bulbophyllum paullum* Ridl., **FMP4** 70; epiphyte; montane forest; widespread.

233.22.66 **Bulbophyllum mutabile** (Blume) Lindl., **H44** 445, **S20** 457; pendulous epiphyte; montane forest; Pk, Ph, Sl (one collection each).

233.22.67 **Bulbophyllum nematocaulon** Ridl., **FMP4** 63, **H44** 442, **S20** 521; *Bulbophyllum oreas* Ridl., **FMP4** 63, **H44** 442; epiphyte; montane forest; Pk, Ph, Sl.

233.22.68 **Bulbophyllum nigropurpureum** Carr, **H44** 430, **S20** 503; epiphyte; on mangrove and riverside trees; Ph, Sp; endemic.

233.22.69 **Bulbophyllum obtusipetalum** J.J.Sm., **S20** 464; creeping epiphyte; montane forest; once collected at Cameron Highlands, Ph.

233.22.70 **Bulbophyllum obtusum** (Blume) Lindl., **S20** 472; *Bulbophyllum parvilabium* Schltr., **H44** 455; pendulous epiphyte; hill forest; Penang Hill and Ulu Kali, Sl.

233.22.71 **Bulbophyllum octorhopalon** Seidenf., **S20** 509; *Bulbophyllum epicrianthes auct. non* Hook.*f.*, **FMP4** 64, **H44** 428; epiphyte; lowland forest; Pk, Ph, Jh; endemic.

233.22.72 **Bulbophyllum odoratum** (Blume) Lindl., **FMP4** 72, **H44** 446, **S20** 457; epiphyte; on trees by rivers; Kl, Pk, Ph, Sl.

233.22.73 **Bulbophyllum ovalifolium** (Blume) Lindl., **H44** 435, **S20** 513; *Bulbophyllum tinea* Ridl., **FMP4** 62, **H44** 436; epiphyte; lowland and montane forest; widespread.

233.22.74 **Bulbophyllum pan** Ridl., **FMP4** 63, **H44** 439, **S20** 518; epiphyte; on mossy mountain trees at about 1600 m; only known from Gg Tahan, Ph; endemic.

233.22.75 **Bulbophyllum papillosofilum** Carr, **H44** 427, **S20** 507; epiphyte; lowland forest; Kuala Teku, Pk and Batu Kurau, Ph; endemic.

233.22.76 **Bulbophyllum patens** King *ex* Hook.*f.*, **FMP4** 57, **H44** 417, **S20** 481; epiphyte; lowland trees; many places.

233.22.77 **Bulbophyllum penduliscapum** J.J.Sm., **S20** 501; epiphyte; only recorded from Batu Melintang, Kl.

233.22.78 **Bulbophyllum pileatum** Lindl.; **FMP4** 57, **H44** 422, **S20** 479; climbing epiphyte; on lowland trees; widespread.

233.22.79 **Bulbophyllum planibulbe** (Ridl.) Ridl., **FMP4** 75, **H44** 406, **S20** 465; *Bulbophyllum tenerum* Ridl., **FMP4** 65, **H44** 408; epiphyte; lowland forest; Kd, Ph.

233.22.80 **Bulbophyllum poekilon** Carr, **H44** 458, **S20** 497; epiphyte; montane forest; known only from Fraser's Hill, Ph; endemic.

233.22.81 **Bulbophyllum purpurascens** Teijsm. & Binn., **FMP4** 78, **H44** 410, **S20** 449; *Bulbophyllum perakense* Ridl., **FMP4** 77, **H44** 410; *Bulbophyllum rhizophoreti* Ridl., **FMP4** 77; epiphyte; lowland forest; not uncommon.

233.22.82 **Bulbophyllum pustulatum** Ridl., **FMP4** 60, **H44** 420, **S20** 477; epiphyte; lowland forest; Jh.

233.22.83 **Bulbophyllum restrepia** Ridl., **FMP4** 75, **H44** 406, **S20** 517; epiphyte; on old mangrove and riverside trees; Ph, Jh, Sp; endemic.

233.22.84 **Bulbophyllum retusiusculum** Rchb.*f*., **S20** 453; epiphyte; montane forest; one poor specimen from Gg Tahan, Ph.

233.22.85 **Bulbophyllum rhizomatosum** Ames & Schweinf., **S20** 457; *Bulbophyllum minimibulbum* Carr., **H45** 445; pendulous epiphyte; montane forest; once collected at Fraser's Hill, Ph.

233.22.86 **Bulbophyllum ruficaudatum** Ridl., **S20** 445; *Bulbophyllum microbulbon auctt. non* Schltr., **FMP4** 79, **H44** 414; epiphyte; on lowland trees; Sp.

233.22.87 **Bulbophyllum rugosum** Ridl., **FMP4** 60, **H44** 421, **S20** 475; epiphyte; lowland forest; Sp.

233.22.88 **Bulbophyllum salaccense** Rchb.*f*., **H44** 457, **S20** 495; pendulous epiphyte; montane forest; about 1200 m; Fraser's Hill, Ph, only confirmed locality.

233.22.89 **Bulbophyllum sessile** (J. König) J.J.Sm., **H44** 451, **S20** 503; *Bulbophyllum clandestinum* Lindl., **FMP4** 69; bushy pendulous epiphyte; exposed lowland trees; widespread.

233.22.90 **Bulbophyllum sichyobulbon** C.S.P. Parish & Rchb.*f*., **S20** 491; epiphyte; doubtfully recorded from Ps.

233.22.91 **Bulbophyllum singaporeanum** Schltr., **H44** 458, **S20** 485; *Bulbophyllum densiflorum* (*non* Rolfe) Ridl., **FMP4** 68; epiphyte; on riverside trees; Jh, Sp.

233.22.92 **Bulbophyllum stormii** J.J.Sm., **S20** 511; *Bulbophyllum araniferum* Ridl., **FMP4** 61, **H44** 433; *Bulbophyllum longistelidium* Ridl., **FMP4** 64, **H44** 433; *Bulbophyllum tristriatum* Carr, **H44** 433; epiphyte; montane forest; Ph, Sl.

233.22.93 **Bulbophyllum striatellum** Ridl., **FMP4** 62, **H44** 437, **S20** 519; epiphyte; old mangrove and riverside trees; Kl, Jh, Sp.

233.22.94 **Bulbophyllum subumbellatum** Ridl., **FMP4** 61, **H44** 426, **S20** 485; epiphte; lowland forest; Jh.

233.22.95 **Bulbophyllum tahanense** Carr, **H44** 463, **S20** 487; epiphyte; montane forest; about 1700 m; known only from Gg Tahan, Ph; endemic.

233.22.96 **Bulbophyllum tekuense** Carr, **H44** 436, **S20** 515; epiphyte; known only from type, Kuala Teku, Ph; Endemic.

233.22.97 **Bulbophyllum tenuifolium** (Blume) Lindl., **H44** 439, **S20** 518; *Bulbophyllum nigromaculatum* Holttum, **H44** 441; epiphyte; lowland and montane forest; Ph, Sl, Jh, Sp.

233.22.98 **Bulbophyllum titanea** Ridl., **FMP4** 62, **H44** 436, **S20** 515; epiphyte; montane forest; known only from the upper slopes of Gg Tahan, Ph; endemic.

233.22.99 **Bulbophyllum tortuosum** (Blume) Lindl., **H44** 431, **S20** 503; pendulous epiphyte; on riverside trees; only collected from Sg Sat, Ph.

233.22.100 **Bulbophyllum trifolium** Ridl., **FMP4** 68, **H44** 457, **S20** 495; epiphyte; on riverside trees; Ph, Jh, Sp.

233.22.101 **Bulbophyllum uniflorum** (Blume) Hassk., **H44** 422, **S20** 477; *Bulbophyllum galbinum* Ridl., **FMP4** 58; *Bulbophyllum variabile* Ridl., **FMP4** 59; epiphyte; mostly montane forest; widespread.

233.22.102 **Bulbophyllum vaginatum** (Lindl.) Rchb.*f.*, **FMP4** 76, **H44** 409, **S20** 439; epiphyte; on exposed lowland trees; common, widespread.

233.22.103 **Bulbophyllum vermiculare** Hook.*f.*, **FMP4** 71, **H44** 446, **S20** 461; creeping epiphyte; on lowland trees incl. mangroves; Pk to Sp.

233.22.104 **Bulbophyllum vesiculosum** J.J.Sm., **S20** 507; *Bulbophyllum corneri* Carr, **H44** 428; epiphyte; on old mangrove trees; collected once from Chua Chu Kang, Sp.

233.22.105 **Bulbophyllum virescens** J.J.Sm., **S20** 483; *Bulbophyllum maximum* [*non* (Lindl.) Rchb.*f.*] (Ridl.) Ridl., **FMP4** 81, **H44** 426; epiphyte; hill forest; Main Range.

233.22.106 **Bulbophyllum viridescens** Ridl., **FMP4** 73, **H44** 445, **S20** 463; epiphyte or epilith; montane forest; only known from 1100 m on Gg Tahan, Ph.

233.22.107 **Bulbophyllum wrayi** Hook.*f.*, **FMP4** 66, **H44** 463, **S20** 487; epiphyte; montane forest above 750 m; Pk, Ph, Sl; endemic.

233.22.108 **Bulbophyllum xanthum** Ridl., **FMP4** 68, **H44** 451, **S20** 491; epilith; on limestone at 270 m; only known from type, P. Dayang Bunting, Langkawi; endemic.

233.22.109 **Bulbophyllum yoksunense** J.J.Sm., **H44** 410, **S20** 443; epiphyte; montane forest; once collected at The Gap, Sl; identity uncertain.

233.22.110 **Bulbophyllum sp.** (C.E. Carr 434), **H44** 458, **S20** 495; pendulous epiphyte; hill forest; known only from (missing !) type, Gg Panti, Jh; endemic.

233.23.1 **Calanthe albolutea** Ridl., **FMP4** 121, **H44** 156, **S20** 173; herb to 80 cm tall; montane forest; Kd, Pk, Ph; endemic.

233.23.2 **Calanthe angustifolia** (Blume) Lindl., **FMP4** 120 incl. var. *flava* Ridl., **H44** 156, **S20** 171; herb about 50 cm tall; montane forest; up to 2000 m; north of the Peninsula.

233.23.3 **Calanthe aurantiaca** Ridl., **FMP4** 120, **H44** 157, **S20** 173; herb to 40 cm tall; montane forest; Pk, Ph; endemic.

233.23.4 **Calanthe carrii** Seidenf. & J.J. Wood, **S20** 171; *Calanthe pusilla* (*non* Finet) Carr, **H44** 156; herb to 40 cm tall; montane forest; 1000–1200 m; only known from Gg Tahan, Ph; endemic.

233.23.5 **Calanthe ceciliae** Rchb.*f.*, **FMP4** 119, **H44** 153, **S20** 169; herb to 50 cm tall; lowland and hill forest including on limestone; to 1000 m; widespread but not extreme south.

233.23.6 **Calanthe clavata** Lindl., **S20** 175; herb to 80 cm tall; montane forest; once collected at Cameron Highlands, Ph.

233.23.7 **Calanthe cleistogama** Holttum, **H44** 155, **S20** 171; herb; montane forest; Gg Jerai, Kd and Fraser's Hill, Ph; endemic.

233.23.8 **Calanthe johorensis** Holttum, **H44** 156, **S20** 171; herb to over 1 m tall; montane forest; known only from the top of Gg Panti, Jh; endemic.

233.23.9 **Calanthe lyroglossa** Rchb.*f.*, **S20** 175; *Calanthe foerstermannii* Rchb.*f.*, **FMP4** 121, **H44** 157; herb to about 50 cm tall; montane forest; 700–1900 m; Pk, Ph.

233.23.10 **Calanthe monophylla** Ridl., **FMP4** 122, **H44** 151, **S20** 165; one-leaved herb; montane forest; only one certain collection from Cameron Highlands, Ph; endemic.

233.23.11 **Calanthe ovata** Ridl., **FMP4** 120, **H44** 155, **S20** 169; herb to nearly 1 m tall; montane forest; known only from type, Cameron Highlands, Ph; endemic.

233.23.12 **Calanthe pubescens** Ridl., **FMP4** 120, **H44** 154, **S20** 169; herb to 50 cm tall; poorly known; endemic.

233.23.13 **Calanthe pulchra** (Blume) Lindl., **H44** 157, **S20** 173; *Calanthe curculigoides* Lindl., **FMP4** 121; herb about 60 cm tall; lowland and hill forest; to 1000 m; widespread.

233.23.14 **Calanthe rubens** Ridl., **H44** 151, **S20** 165; *Preptanthe rubens* (Ridl.) Ridl., **FMP4** 123; epilith; on limestone rocks; P. Langkawi.

233.23.15 **Calanthe rigida** Carr, **H44** 158, **S20** 175; herb about 40 cm tall; montane fores above 1700 m; Ph, Sl; endemic.

233.23.16 **Calanthe salaccensis** J.J.Sm., **H44** 158, **S20** 175; herb about 40 cm tall; montane forest; once on Gg Panti, Jh.

233.23.17 **Calanthe speciosa** (Blume) Lindl., **FMP4** 121, **H44** 158, **S20** 175; herb to 60 cm tall; montane forest; true occurrence doubtful.

233.23.18 **Calanthe sylvatica** (Thouars) Lindl., **S20** 167; *Calanthe emarginata* (Blume) Lindl., **H44** 153; *Calanthe masuca* (D. Don) Lindl., **H44** 153; herb to 50 cm tall; montane forest; only known from Gg Lang, Kd.

233.23.19 **Calanthe taenioides** J.J.Sm., **S20** 167; herb to 45 cm tall; montane forest at about 1600 m; only known from Gg Brinchang, Ph.

233.23.20 **Calanthe triplicata** (Willemet) Ames, **H44** 154, **S20** 169; *Calanthe veratrifolia* (Willd.) Ker Gawl., **FMP4** 119; herb to 75 cm tall; wet lowland and montane forest to 1700 m; widespread.

233.23.21 **Calanthe vestita** Lindl., **H44** 151, **S20** 165; *Preptanthe vestita* (Lindl.) Rchb.*f*, **FMP4** 123; epiphyte; forest on limestone; once at Batu Caves, Sl.

233.24.1 **Cephalantheropsis gracilis** (Lindl.) S.Y. Hu, **S20** 180; *Calanthe gracilis* Lindl., **FMP4** 122; *Phaius longipes* (Hook.*f*.) Holttum, **H44** 175; herb about 60 cm tall; montane forest; only known from Gg Jerai, Kd.

233.25.1 **Ceratostylis ampullacea** Kraenzl., **H44** 493, **S20** 311; rush-like tufted epiphyte about 15 cm tall; montane forest; widespread.

233.25.2 **Ceratostylis clathrata** Hook.*f*., **FMP4** 111, **H44** 496, **S20** 317; pendulous epiphyte about 12 cm long; montane forest; Pk, Ph, Sl; endemic.

233.25.3 **Ceratostylis eriaeoides** Hook.*f*., **FMP4** 110, **H44** 495, **S20** 315; tiny tufted epiphyte to 6 cm tall; montane forest; Ph, Sl; endemic.

233.25.4 **Ceratostylis gracilis** Blume, **S20** 311, **H44** 493; rush-like tufted epiphyte to 10 cm tall; montane forest; Ph, Sl.

233.25.5 **Ceratostylis lancifolia** Hook.*f*., **FMP4** 109, **H44** 493, **S20** 311; tufted epiphyte to 15 cm tall; montane forest; Pk, Ph, Sl; endemic.

233.25.6 **Ceratostylis pendula** Hook.*f*., **FMP4** 111, **H44** 496, **S20** 317; pendulous epiphyte to 30 cm long; lowland forest; widespread.

233.25.7 **Ceratostylis pulchella** Holttum, **H44** 495, **S20** 315; epiphyte about 15 cm tall; low down on trees in montane forest; Ph, Sl; endemic.

233.25.8 **Ceratostylis puncticulata** Ridl., **FMP4** 111, **H44** 496, **S20** 315; pendulous epiphyte; montane forest; known only from type, Gg Hijau, Pk; endemic.

233.25.9 **Ceratostylis radiata** J.J.Sm., **S20** 311; *Ceratostylis linearifolia* Ridl., **FMP4** 110, **H44** 495; epiphyte about 15 cm tall; hill forest; once collected on Gg Raya, Langkawi.

233.25.10 **Certostylis robusta** Hook.*f*., **FMP4** 110, **H44** 496, **S20** 315; epiphyte; montane forest; known only from type, Pk; endemic.

233.25.11 **Ceratostylis subulata** Blume, **FMP4** 109, **H44** 493, **S20** 310; rush-like tufted epiphyte to 15 cm tall; lowland and montane forest; widespread.

233.25.12 **Ceratostylis sp.**, **H44** 495, **S20** 317; epiphyte; Cameron Highlands, Ph.

233.26.1 **Cheirostylis goldschmidtiana** Schltr., **S20** 77; herb to 20 cm tall; hill forest; Penang Hill, Pn; endemic.

233.26.2 **Cheirostylis montana** Blume, **S20** 77; *Cheirostylis flabellata auct. non* Wight; **FNP4** 218, **H44** 129; herb about 20 cm tall; Pn, Ph.

233.26.3 **Cheirostylis pusilla** Lindl., **S20** 77; herb up to 10 cm tall; hill forest; only known from Penang Hill, Pn.

233.27.1 **Chelonistele sulphurea** (Blume) Pfitzer, **S20** 199; *Chelonistele perakensis* (Rolfe) Ridl., **FMP4** 138, **H44** 240; *Chelonistele pusilla* (Ridl.) Ridl., **FMP4** 138, **H44** 240; epiphyte; montane forest; Kd, Pk, Ph, Sl.

233.28.1 **Chiloschista sweelimii** Holttum, **S20** 657; epiphyte consisting largely of green roots; Pk; endemic.

233.29.1 **Chroniochilus ecalcaratus** (Holttum) Garay, **S20** 694; *Sarcochilus ecalcaratus* Holttum, **H44** 690; tiny epiphyte about 5 cm tall; lowland forest; only known from Mentakab, Ph; endemic.

233.29.2 **Chroniochilus minimus** (Blume) J.J.Sm., **S20** 694; *Sarcochilus tjidadapensis* (J.J.Sm.) Carr, **H44** 689; tiny epiphyte about 2 cm tall; lowland and montane forest; Ph.

233.29.3 **Chroniochilus virescens** (Ridl.) Holttum, **S20** 693; *Sarcochilus virescens* Ridl., **FMP4** 179, **H44** 688; tiny epiphyte about 5 cm tall; lowland forest; Pk, Ph.

233.30.1 **Chrysoglossum ornatum** Blume, **H44** 178, **S20** 533; large-leaved creeping herb to 70 cm tall; montane forest; once at Fraser's Hill, Ph.

233.31.1 **Cirrhopetalum auratum** Lindl., **G06** 617; *Bulbophyllum campanulatum* Rolfe, **FMP4** 78, **H44** 416; *Bulbophyllum auratum* (Lindl.) Rchb.*f*, **S20** 447; epiphyte; lowland riverside trees; Tg, Sl, Ph.

233.31.2 **Cirrhopetalum brienianum** Rolfe, **G06** 617, **S19** 34; *Bulbophyllum makoyanum* (Rchb.*f*.) Ridl. var. *brienianum* (Rolfe) Ridl., **FMP4** 80; *Bulbophyllum brienianum* (Rolfe) Ames, **H44** 412. **S20** 445; creeping epiphyte; Pk, Jh.

233.31.3 **Cirrhopetalum concinnum** Hook.*f*., **G06** 618, **S19** 34; *Bulbophyllum pulchellum* Ridl., **FMP4** 80, **H44** 415, **S20** 449; epiphyte; lowland and hill forest; widespread.

233.31.4 **Cirrhopetalum curtisii** Hook.*f*., **G06** 618, **S20** 34; *Bulbophyllum pulchellum* Ridl. var *purpureum* Ridl., **FMP4** 80; *Bulbophyllum corolliferum* J.J.Sm., **H44** 414, **S20** 445; epiphyte; Kl, Tg, Pn, Pk, Ph.

233.31.5 **Cirrhopetalum fenestratum** (J.J. Sm.) Garay & al., **G06** 621, **S19** 37; *Bulbophyllum taeniophyllum auct. non* C.S.P. Parish & Rchb.*f.*, **S20** 449 in part; *Bulbophyllum punctatissimum* (Ridl.) Ridl., **FMP4** 77; *Bulbophyllum fenestratum* J.J.Sm., **H44** 411 in part; only known from type, locality uncertain.

233.31.6a **Cirrhopetalum gusdorfii** (J.J. Sm.) Garay & al. var. *gusdorfii*, **G06** 621, **S19** 35; *Bulbophyllum gusdorfii* J.J.Sm., **S20** 447 in part; epiphyte; lowland forest; Ph, Sl, Jh.

233.31.6b **Cirrhopetalum gusdorfii** (J.J. Sm.) Garay & al. var. *johorense nom. inval.*, **G06** 621, **S19** 35; *Bulbophyllum gusdorfii* J.J.Sm., **S20** 447 in part; *Bulbophyllum gusdorfii* J.J.Sm. var. *johorense nom. nud.*, **H44** 412; lowland forest: Jh, Sp.

233.31.7 **Cirrhopetalum lepidum** (Blume) Schltr., **G06** 618, **S19** 36; *Bulbophyllum griffithianum* C.S.P. Parish & Rchb.*f.*, **FMP4** 80; *Bulbophyllum lepidum* (Blume) J.J.Sm., **H44** 415, **S20** 441; epiphyte; on lowland trees; south of Malaya.

233.31.8 **Cirrhopetalum makoyanum** Rchb.*f.*, **G06** 619, **S19** 36; *Bulbophyllum makoyanum* (Rchb.*f.*) Ridl., **FMP4** 79, **H44** 412, **S20** 443; epiphyte; once collected from Chan Chu Kang, Sp.

233.31.9 **Cirrhopetalum ochraceum** Ridl., **G06** 619, **S19** 36; *Bulbophyllum ochraceum* [*non* Cogn.] (Ridl.) Ridl., **FMP4** 81, **H44** 415; *Bulbophyllum serratotruncatum* Seidenf., **S20** 441; epiphyte; lowland forest; Ph, Sl; endemic.

233.31.10 **Cirrhopetalum puguahaanense** (Ames) Garay & al., **G06** 621, **S19** 36; *Bulbophyllum chekaense* Carr, **H44** 408; *Bulbophyllum puguahaanense* Ames, **S20** 453; epiphyte; on riverside trees; once at Sg Cheka, Ph.

233.31.11 **Cirrhopetalum skeatianum** (Ridl.) Garay & al., **G06** 622, **S19** 36; *Bulbophyllum skeatianum* Ridl., **FMP4** 78, **H44** 411, **S20** 453; epiphyte; montane forest; Tg, Ph; endemic.

233.31.12 **Cirrhopetalum taeniophyllum** (C.S.P. Parish & Rchb.*f.*) Hook.*f.*, **G06** 620, **S19** 37; *Bulbophyllum taeniophyllum* C.S.P. Parish & Rchb.*f.*, **S20** 449 in part; *Bulbophyllum rupicolum* Ridl., **FMP4** 77; *Bulbophyllum fenestratum auct. non* J.J.Sm., **H44** 411 in part; epilith; often on limestone; mostly Kl.

233.32.1 **Claderia viridiflora** Hook.*f.*, **FMP4** 140, **H44** 184, **S20** 531; creeping herb often ascending tree trunks a short way; lowland and hill forest; widespread.

233.33.1 **Cleisomeria lanatum** (Lindl.) Lindl. *ex* G. Don, **S20** 619; *Sarcanthus lanatus* (Lindl.) Holttum, **H44** 654; erect plant about 15 cm tall; lowlands; Kd, Ph, Jh.

233.34.1 **Cleisostoma arietinum** (Rchb.*f.*) Garay, **S20** 621; *Saccolabium kunstleri* (King & Pantl.) Ridl., **FMP4** 169; *Sarcanthus kunstleri* King & Pantl., **H44** 652; epiphyte about 10 cm tall; once from Pk.

233.34.2 **Cleisostoma capricorne** (Ridl.) Garay, **S20** 623; Ridl., **FMP4** 181; *Sarcanthus capricornis* (Ridl.) Holttum, **H44** 653; tufted epiphyte about 10 cm tall; montane forest; once on Gg Senyum, Ph.

233.34.3 **Cleisostoma complicatum** (Seidenf.) Garay, **S19** 63; epiphyte; once from Tasek Temengor, Pk.

233.34.4 **Cleisostoma discolor** Lindl., **S20** 627; *Sarcanthus termissus* Rchb.*f.*, **H44** 657; epiphyte about 10 cm tall; lowland forest ? on limestone; P. Langkawi and Lenggong, Pk.

233.34.5 **Cleisostoma fissicors** (Ridl.) Seidenf. & J.J. Wood, **S20** 629; *Saccolabium fissicors* Ridl., **FMP4** 170; *Sarcanthus fissicors* (Ridl.) J.J.Sm., **H44** 659; epiphyte about 10 cm tall; lowland and montane forest; Pk, Ph; endemic.

233.34.6 **Cleisostoma halophilum** (Ridl.) Garay, **S20** 623; *Saccolabium halophilum* Ridl., **FMP4** 168; *Ascochilus teres* Ridl., **FMP4** 181; *Sarcanthus halophilus* (Ridl.) J.J.Sm., **H44** 653; pendulous epiphyte about 30 cm long; on lowland trees, often near the sea; south of Peninsula.

233.34.7 **Cleisostoma holttumii** (Carr) Garay, **S20** 627; epiphyte; known only from type; unknown Malayan locality; endemic.

233.34.8 **Cleisostoma inflexilobum** (Holttum) Garay, **S20** 627; *Sarcanthus inflexilobus* Holttum, **H44** 657; epiphyte; forest on limestone; known only from type; Gua Musang, Kl; endemic.

233.34.9 **Cleisostoma odoratum** Garay, **S20** 631; *Saccolabium ionosmum* (Ridl.) Ridl., *nom. illeg.*, **FMP4** 174; *Sarcanthus ionosmum* (Ridl.) Holttum, *nom. illeg.*, **H44** 660; epiphyte; montane forest; known only from the Taiping Hills, Pk; endemic.

233.34.10 **Cleisostoma rostellatum** (Ridl.) Garay, **S20** 631; *Saccolabium bicarinatum* Ridl., **FMP4** 170; *Sarcanthus rostellatum* Ridl., **H44** 660; epiphyte; lowlands; Pk, Sl.

233.34.11 **Cleisostoma rugosulum** (Ridl.) Seidenf., **S19** 62; *Saccolabium rugosulum* Ridl., **FMP4** 168; *Sarcanthus rugosulus* (Ridl.) Holttum, **H44** 659 '*rugulosus*'; epiphyte; known only from type, Gg Jerai, Kd; endemic.

233.34.12 **Cleisostoma scortechinii** (Hook.*f.*) Garay, **S20** 625; *Saccolabium scortechinii* (Hook.*f.*) Ridl., **FMP4** 169; *Sarcanthus scortechinii* Hook.*f.*, **H44** 655; climbing epiphyte to 2 m long; lowland forest; widespread.

233.34.13 **Cleisostoma striatum** (Rchb.*f.*) Garay, **S20** 629; epiphyte to 15 cm long; montane forest; Kl, Sl.

233.34.14 **Cleisostoma subulatum** Blume, **S20** 625; *Saccolabium secundum* (Griff.) Ridl., **FMP4** 169; *Sarcanthus subulatus* (Blume) Rchb.*f.*, **H42** 654; epiphyte to 30 cm tall; on lowland trees, often near the sea; widespread.

233.34.15 **Cleisostoma suffusum** (Ridl.) Garay, **S20** 628; *Saccolabium suffusum* Ridl., **FMP4** 166; *Sarcanthus suffusus* (Ridl.) J.J.Sm., **H44** 657; epiphyte to 20 cm long; Pk, Ph, Ml.

233.34.16 **Cleisostoma teretifolium** Teijsm. & Binn., **S20** 621; *Saccolabium machadonis* Ridl., **FMP4** 168; *Sarcanthus machadonis* (Ridl) J.J.Sm., **H44** 652; epiphyte about 20 cm long; lowland forest; Kl, Pk, Sl, Jh.

233.34.17 **Cleisostoma williamsonii** (Rchb.*f.*) Garay, **S20** 623; *Saccolabium sacculatum* (Ridl.) Ridl., **FMP4** 172; *Sarcanthus sacculatus* Ridl., **H44** 653; epiphyte about 30 cm long; P. Langkawi, Ps.

233.35.1 **Coelogyne anceps** Hook.*f.*, **FMP4** 135, **H44** 247, **S20** 217; epiphyte; Pk; endemic.

233.35.2 **Coelogyne asperata** Lindl., **FMP4** 131, **H44** 253, **S20** 217; epiphyte or epilith about 40 cm tall; near lowland streams.

233.35.3 **Coelogyne cumingii** Lindl., **FMP4** 134, **H44** 249, **S20** 209; epiphyte or epilith about 10 cm tall; lowlands and hills; widespread.

233.35.4 **Coelogyne fimbriata** Lindl., **S20** 207; *Coelogyna pallens auct. non* Ridl., **FMP4** 135 in part, **H44** 248 in part; epiphyte; montane forest; once collected on Gg Jerai, Kd.

233.35.5 **Coelogyne flexuosa** Rolfe, **H44** 248, **S20** 207; epiphyte up to 10 cm tall; poorly known.

233.35.6 **Coelogyne foerstermannii** Rchb.*f.*, **FMP4** 132, **H44** 251, **S20** 208; *Coelogyne kingii* Hook.*f.*, **FMP4** 133, **H44** 251; epiphyte to 40 cm tall; lowland and hill forest, often high on trees; widespread.

233.35.7 **Coelogyne judithiae** P. Taylor, **S20** 215; epiphyte up to 50 cm tall; montane forest; only known from Taiping Hills, Pk; endemic.

233.35.8 **Coelogyne kaliana** P.J. Cribb, **S20** 211; epiphyte up to 10 cm tall; montane forest at 1650–1900 m; Pk, Ph, Sl; endemic.

233.35.9 **Coelogyne longibracteata** Hook.*f.*, **FMP4** 132, **H44** 249, **S20** 209; epiphyte about 30 cm tall; montane forest; several highland areas; endemic.

233.35.10 **Coelogyne massangeana** Rchb.*f*., **H44** 257, **S20** 213; *Coelogyne densiflora* Ridl., **FMP4** 130; *Coelogyna tomentosa* Lindl var. *cymbidiodes* (Ridl.) Ridl., **FMP4** 130; *Coelogyne tomentosa* Lindl. var. *massangeana* (Rchb.f.) Ridl., **FMP4** 130; epiphyte about 40 cm tall; montane forest; not uncommon.

233.35.11 **Coelogyne mayeriana** Rchb.*f*., **FMP4** 133, **H44** 254, **S20** 217; epiphyte about 30 cm tall; on old trees near the sea; south of the Peninsula.

233.35.12 **Coelogyne pallens** Ridl., **FMP4** 135, **H44** 248, **S20** 205; epiphyte about 15 cm tall; montane forest; Kd, Pk, Ph.

233.35.13 **Coelogyne pandurata** Lindl., **FMP4** 133, **H44** 254, **S20** 217; epiphyte about 30 cm tall; on old riverside trees in the lowlands; widespread.

233.35.14 **Coelogyne prasina** Ridl., **FMP4** 136, **H44** 244, **S20** 201; epiphyte, occasionally terrestrial; montane forest; Kd, Pk, Ph.

233.35.15 **Coelogyne pulverula** Teijsm. & Binn., **S19** 18; *Coelogyne dayana* Rchb.*f*., **H44** 258, **S20** 215; *Coelogyne tomentosa* (*non* Lindl.) Ridl.; **FMP4** 130 in part; epiphyte about 50 cm tall; montane forest.

233.35.16 **Coelogyne radicosa** Ridl., **FMP4** 135, **S20** 203; *Coelogyne carnea* [*non* (Blume) Rchb.*f*.] Hook.*f*., **FMP4** 135, **H44** 246; epiphyte about 20 cm tall; montane forest; widespread.

233.35.17 **Coelogyne rochussenii** de Vriese, **FMP4** 131, **H44** 257, **S20** 213; epiphyte about 30 cm tall; lowland forest; widespread; common.

233.35.18 **Coelogyne septemcostata** J.J.Sm., **S20** 205; *Coelogyne speciosa* [*non* (Blume) Lindl.] Ridl., **FMP4** 134 in part; *Coelogyne membranifolia* Carr, **H44** 243; epiphyte about 20 cm tall; lowland forest; Ph, Jh.

233.35.19 **Coelogyne stenochila** Hook.*f*., **FMP4** 136, **H44** 245, **S20** 201; creeping epiphyte about 15 cm tall; montane forest; Ph, Sl; endemic.

233.35.20 **Coelogyne stipitibulbum** Holttum, **H44** 247, **S20** 203; epiphyte about 10 cm tall; montane forest; only known from the Cameron Highlands, Ph; endemic.

233.35.21 **Coelogyne swaniana** Rolfe, **H44** 257, **S20** 213; *Coelogyne quadrangularis* Ridl., **FMP4** 131; epiphyte; montane forest; known only from the Taiping Hills, Pk.

233.35.22 **Coelogyne testacea** Lindl., **FMP4** 129, **H44** 259, **S20** 215; epiphyte about 20 cm tall; on big trees near rivers and the sea; more frequent in the south.

233.35.23 **Coelogyne tiomanensis** M.R. Hend., **H44** 243, **S20** 205; epiphyte about 20 cm tall; hill forest; about 1000 m; known only from P. Tioman; endemic.

233.35.24 **Coelogyne tomentosa** Lindl., **FMP4** 130, **H44** 256, **S20** 211; epiphyte up to 15 cm tall; montane forest; Pk.

233.35.25 **Coelogyne trinervis** Lindl., **S20** 207; *Coelogyne stenophylla* Ridl., **FMP4** 132; *Coelogyne cinnamomea* (*non* Lindl.) Teijsm. & Binn., **H44** 253; epiphyte about 20 cm tall; P. Langkawi, Kl, Pn, Ph.

233.35.26 **Coelogyne viscosa** Rchb.*f.*, **S20** 209; *Coelogyne graminifolia* C.S.P. Parish & Rchb.*f.*, **H44** 253; epiphyte to 40 cm tall; once from Pk.

233.35.27 **Coelogyne xanthoglossa** Ridl., **FMP4** 134, **H44** 243, **S20** 205; epiphyte about 15 cm tall; known only from Gg Tahan, Ph; endemic.

233.35.28 **Coelogyne xyrekes** Ridl., **FMP4** 134, **H44** 243, **S20** 203; epiphyte to 30 cm tall; montane forest; 1300–1700 m; common.

233.36.1 **Collabium simplex** Rchb.*f.*, **S20** 533; *Chrysoglossum simplex* (Rchb.*f.*) J.J.Sm., **H44** 179; purple-spotted herb to 40 cm tall; montane forest; Pk, Ph.

233.37.1 **Cordiglottis breviscapa** (Carr) Garay, **S20** 635; *Cheirorchis breviscapa* Carr, **H44** 67; pendulous epiphyte up to 20 cm long; lowland forest; known only from Budu and Batu Balai, Ph; endemic.

233.37.2 **Cordiglottis filiformis** (Hook.*f.*) Garay, **S20** 637; *Dendrocolla filiformis* (Hook.*f.*) Ridl., **FMP4** 187; *Cheirorchis filiformis* (Hook.*f.*) Carr, **H44** 679; epiphyte to 20 cm tall; lowland forest; Kl, Pk, Ph, Sl, Jh, Sp.

233.37.3 **Cordiglottis fulgens** (Ridl.) Garay, **S20** 637; *Cheirorchis fulgens* (Ridl.) Carr, **H44** 679; epiphyte; known only in cultivation; possibly Malayan native.

233.37.4 **Cordiglottis major** (Carr) Garay, **S20** 635; *Cheirorchis major* Carr, **H44** 678; pendulous epiphyte about 15 cm long; lowland forest; Kerambit, Ph, and Mawai, Jh.

233.37.5 **Cordiglottis pulverulenta** (Carr) Garay, **S20** 637; *Cheirorchis pulverulenta* Carr, **H44** 678; tiny epiphyte a few cm tall; lowland forest; known only from type, Tembeling, Ph; endemic.

233.38.1 **Corybas calcicolus** J. Dransf. & G. Smith, **S20** 121; *Corybas mucronatus* [*non* (Blume) Schltr.] Holttum, **H44** 93 in part; tiny tuberous one-leaved herb a few cm tall; on mossy limestone rocks; Kl, Ph, Sl; endemic.

233.38.2 **Corybas calopeplos** J. Dransf. & G. Smith, **S20** 119; *Corybas johanniswinkleri* (*non* J.J.Sm.) Holttum, **H44** 93; tiny tuberous one-leaved herb a few cm tall; on mossy banks in lower montane forest at 1400–1800 m; Kd, Ph; endemic.

233.38.3 **Corybas carinatus** (J.J.Sm.) Schltr., **S20** 117; *Corysanthes mucronata* (*non* Blume) Ridl., **FMP4** 205; *Corybas johanniswinkleri* J.J.Sm., **H44** 93 in part; *Corybas mucronatus* [*non* (Blume) Schltr.] Holttum, **H44** 93 in part; tiny tuberous one-leaved herb a few cm tall; on mossy rocks in montane forest; Pk, Ph, Jh.

233.38.4 **Corybas caudatus** Holttum, **H44** 93, **S20** 122; tiny tuberous one-leaved herb a few cm tall; on mountain rocks; known only from type collected on Gg Tahan, Ph; endemic.

233.38.5 **Corybas comptus** J. Dransf. & G. Smith, **S20** 119; tiny tuberous one-leaved herb a few cm tall; on mossy banks in upper montane forest at 1600–1800 m; Ph, Sl; endemic.

233.38.6 **Corybas fornicatus** (Blume) Rchb.*f.*, **H44** 94 in part, **S20** 117; *Corysanthes fornicata* (Blume) Lindl., **FMP4** 117; tiny tuberous one-leaved herb a few cm tall; mossy rocks in montane forest; Kd, Ph.

233.38.7 **Corybas geminigibbus** J.J.Sm., **S20** 121; tiny tuberous one-leaved herb a few cm tall; montane forest; known only from Gg Jerai, Kd.

233.38.8 **Corybas holttumii** J. Dransf. & G. Smith, **S20** 119; *Corybas johanniswinkleri* (*non* J.J.Sm.) Holttum, **H44** 93 in part; tiny tuberous one-leaved herb a few cm tall; mossy banks in upper montane forest at about 1800 m; Gg Tahan, Ph and Genting Highlands, Ph/Sl; endemic.

233.38.9 **Corybas ridleyanus** Schltr., **S20** 120; *Corysanthes picta* [*non* (Blume) Lindl.] Ridl., **FMP4** 204; *Corysanthes pictus* [*non* (Blume) Rchb.*f.*] Holttum, **H44** 93; tiny tuberous one-leaved herb a few cm tall; ridge-tops in upper montane forest, often in *Sphagnum* clumps, at 1400–1900 m; Ph; endemic.

233.38.10 **Corybas selangorensis** J. Dransf. & G. Smith, **S20** 121; tiny tuberous one-leaved herb a few cm tall; on ridge-tops in montane forest at about 1300 m; known only from Gg Bunga Buah, Sl; endemic.

233.38.11 **Corybas villosus** J. Dransf. & G. Smith, **S20** 120; tiny tuberous one-leaved herb a few cm tall; on ridge-tops in upper montane forest, often in Sphagnum; known only from the Genting Highlands, Ph/Sl; endemic.

233.39.1 **Corymborkis veratrifolia** (Reinw.) Blume, **H44** 144, **S20** 52; *Corymbis longiflora* Hook.*f.*, **FMP4** 208; *Corymbis brevistylis* Hook.*f.*, **FMP4** 208; *Corymborkis rhytidocarpa* (Hook.*f.*) Kuntze, **H44** 146; *Corymborkis brevistylis* (Hook.*f.*) Kuntze, **H44** 146; unbranched herb to 3 m tall; lowland and montane forest; widespread.

233.40.1 **Cryptostylis arachnites** (Blume) Hassk., **FMP4** 225, **H44** 103, **S20** 49; herb 20–60 cm tall; lowland and montane forest to 1800 m; widespread.

233.40.2 **Cryptostylis conspicua** J.J.Sm., **H44** 105, **S20** 50; herb about 50 cm tall, montane forest at 1200–1800 m; Pk, Ph, Jh

233.41.1 **Cymbidium aloifolium** (L.) Sw., **S20** 553; *Cymbidium simulans* Rolfe, **H44** 523, epiphyte to 1 m long; only known from P. Langkawi.

233.41.2 **Cymbidium atropurpureum** (Lindl.) Rolfe, **H44** 520, **S20** 551, epiphyte about 50 cm long; lowlands; Ph, Ml, Jh.

233.41.3 **Cymbidium bicolor** Lindl. ssp. **pubescens** (Lindl.) Du Puy & P.J. Cribb, **S20** 551; *Cymbidium pubescens* Lindl., **FMP4** 145, **H44** 522; epiphyte; on exposed trees often near the sea; widespread.

233.41.4 **Cymbidium chloranthum** Lindl., **H44** 519, **S20** 549; epiphyte; lowlands; Galas, Kl, and Tembeling, Ph.

233.41.5 **Cymbidium dayanum** Rchb.*f.*, **FMP4** 146, **H44** 519, **S20** 549; grassy-leaved tufted epiphyte; lowlands and mountains; Ps, Kd, Ph.

233.41.6 **Cymbidium ensifolium** (L.) ssp. **haematodes** (Lindl.) Du Puy & P.J. Cribb, **S20** 549; *Cymbidium munronianum auct. non* King & Pantl., **FMP4** 146, **H44** 519, grassy-leaved herb to nearly 1 m tall, only known from P. Langkawi.

233.41.7 **Cymbidium finlaysonianum** Lindl., **FMP4** 145, **H44** 520, **S20** 551; epiphyte often forming large masses, on exposed lowland trees, most abundant in the north.

233.41.8 **Cymbidium lancifolium** Hook., **FMP4** 146, **H44** 518, **S20** 547, herb about 20 cm tall; hill forest; Pk, Ph, Ml

233.41.9 **Cymbidium rectum** Ridl., **FMP4** 146, **H44** 520, **S20** 549; epiphyte to 60 cm tall; lowland forest; Sl, NS.

233.41.10 **Cymbidium roseum** J.J.Sm., **H44** 518, **S20** 547, herb, occasionally a low-level epiphyte; mountain ridges at 1500–1800 m; Ph

233.42.1 **Cyrtosia javanica** Blume, **S20** 128, *Galeola javanica* (Blume) Benth. & Hook.*f.*, **FMP4** 203, **H44** 98, fleshy-rooted saprophyte about 25 cm tall, montain forest; Pk, Ph.

233.43.1 **Cystorchis aphylla** Ridl., **FMP4** 212, **H44** 140, **S20** 69; red-brown saprophyte about 15 cm tall; lowland and hill forest; widespread.

233.43.2 **Cystorchis gracilis** (Hook.*f.*) Holttum, **H44** 140, **S20** 69; *Goodyera gracilis* Hook.*f.*, **FMP4** 219; herb to 30 cm tall; montane forest, Taiping Hills, Pk, endemic.

233.43.3a **Cystorchis variegata** Blume var. **purpurea** Ridl., **FMP4** 212, **H44** 139, **S20** 69; herb 10–15 cm tall; lowland forest; Ph, Jh, Sp.

233.43.3b **Cystorchis variegata** Blume var. **variegata**, **FMP4** 211, **H44** 139, **S20** 68; herb 15–25 cm tall; lowland forest; Pk southward.

233.44.1 **Dendrobium acerosum** Lindl., **FMP4** 38, **H44** 338, **S20** 423; epiphyte to 25 cm long; on moderately exposed trees; widespread.

233.44.2 **Dendrobium aciculare** Lindl., **S20** 403; tall thin epiphyte to 30 cm; type possibly from Sp.

233.44.3 **Dendrobium acinaciforme** Roxb., **S20** 411; tufted epiphyte to 40 cm tall; once at Tembeling, Ph.

233.44.4 **Dendrobium aloifolium** (Blume) Rchb.*f.*, **H44** 330, **S20** 411; *Dendrobium serra* (Lindl.) Lindl., **FMP4** 35; epiphyte to 45 cm tall; lowland forest; widespread.

233.44.5 **Dendrobium anosmum** Lindl., **H44** 286, **S20** 383; *Dendrobium superbum* Rchb.*f.*, **FMP4** 52; epiphyte to 120 cm long; forest on limestone; chiefly in the north, uncommon.

233.44.6 **Dendrobium aphyllum** (Roxb.) C.E.C. Fisch., **S20** 383; *Dendrobium pierardii* Roxb. *ex* Hook., **FMP4** 51, **H44** 292; pendulous epiphyte to 1 m long; Ph, Sl.

233.44.7 **Dendrobium atrorubens** Ridl., **FMP4** 37, **H44** 335, **S20** 419; epiphyte to 60 cm tall; montane forest at 900–1500 m; endemic.

233.44.8 **Dendrobium bifarium** Lindl., **FMP4** 42, **H44** 322, **S20** 399; epiphyte to 30 cm long; mostly in the lowlands; widespread.

233.44.9 **Dendrobium blumei** Lindl., **S20** 407; epiphyte 20–40 cm long; Pk.

233.44.10 **Dendrobium brinchangense** Holttum, **H44** 316, **S20** 373; epiphyte to 70 cm tall; upper montane forest at 1800–2000 m; only known from Gg Berinchang, Ph; endemic.

233.44.11 **Dendrobium calicopis** Ridl., **FMP4** 48, **H44** 316, **S20** 373; epiphyte to 40 cm long; [missing] type from P. Langkawi.

233.44.12 **Dendrobium clavator** Ridl., **FMP4** 41, **H44** 326, **S20** 403; very thin epiphyte about 30 cm long; Pk, NS, Jh.

233.44.13 **Dendrobium concinnum** Miq., **S20** 419; *Dendrobium atropurpureum* [*non* (Blume) Miq.] Ridl., **FMP4** 37 in part; *Dendrobium carnosum* (Blume) Rchb.*f.*, **H44** 337; small epiphyte; lowlands and mountains; quite widespread.

233.44.14 **Dendrobium cornutum** Hook.*f.*, **FMP4** 46, **H44** 319, **S20** 378; epiphyte to 60 cm long; mountain tops above 2000 m; several localities.

233.44.15 **Dendrobium crocatum** Hook.*f*., **FMP4** 47, **H44** 319, **S20** 378; epiphyte to 60 cm tall; lowlands, especially on riverside trees; widespread.

233.44.16 **Dendrobium crumenatum** Sw., **FMP4** 42, **H44** 329, **S20** 409; epiphyte sometimes over 1 m long; ubiquitous on roadside trees in the lowlands.

233.44.17 **Dendrobium derryi** Ridl., **FMP4** 47, **H44** 315, **S20** 371; epiphyte to 25 cm long; hill forest; known only from Larut Hills, Pk; endemic.

233.44.18 **Dendrobium erosum** (Blume) Lindl., **S20** 367; *Dendrobium aegle* Ridl., **FMP4** 47, **H44** 318; epiphyte to 60 cm long; lowland and hill forest; Pk, Ph, Jh.

233.44.19 **Dendrobium excavatum** (Blume) Miq., **H44** 336, **S20** 419; epiphyte about 30 cm tall; hill and montane forest; Kd, Pn, Ph.

233.44.20 **Dendrobium exilicaule** Ridl., **S20** 382, **H44** 320; weak, slender epiphyte about 30 cm long; known only from P. Langkawi; endemic.

233.44.21 **Dendrobium farmeri** Paxton, **H44** 282, **S20** 365; epiphyte about 30 cm long; lowland forest, on riverside trees; north of Peninsula.

233.44.22 **Dendrobium flexile** Ridl., **FMP4** 39, **H44** 339, **S20** 423; epiphyte about 12 cm long; on old mangrove and riverside trees; Jh, Sp.

233.44.23 **Dendrobium foxii** Ridl., **FMP4** 49, **H44** 320, **S20** 378; epiphyte about 40 cm long; montane forest; known only from the Taiping Hills, Pk; endemic.

233.44.24 **Dendrobium grande** Hook.*f*., **FMP4** 36, **H44** 332, **S20** 413; epiphyte to 50 cm long; on lofty lowland trees; widespread.

233.44.25 **Dendrobium hendersonii** A.D. Hawkes & A.H. Heller, **H44** 328 in part, **S20** 407; epiphyte to 60 cm tall; lowland forest; Tg, ?Pk, Ph, ?Jh.

233.44.26 **Dendrobium hercoglossum** Rchb.*f*., **FMP4** 45 in part, **S20** 391; *Dendrobium linguella* (*non* Rchb.*f*.) Holttum, **H44** 290 in part; epiphyte about 20 cm long; lowland forest; various localities.

233.44.27 **Dendrobium heterocarpum** Lindl., **H44** 290, **S20** 389; *Dendrobium aureum* Lindl., **FMP4** 51; epiphyte 20–30 cm tall; montane forest; once on the Taiping Hills, Pk.

233.44.28 **Dendrobium hosei** Ridl., **FMP4** 43, **H44** 323 incl. var. *pelor* Carr, **S20** 397; epiphyte to 60 cm long; on riverside trees; Ph.

233.44.29 **Denrabium hughii** Rchb.*f*., **H44** 314, **S20** 368; *Dendrobium lepidum* Ridl., **FMP4** 48; epiphyte about 30 cm long; montane forest; about 1300 m; Kd, Ph, Sl, Jh; endemic.

233.44.30 **Dendrobium hymenanthum** Rchb.*f.*, **S20** 360; *Dendrobium quadrangulare* C.S.P. Parish & Rchb.*f.*, **H44** 275; tufted epiphyte about 10 cm tall; Kl, Ph.

233.44.31 **Dendrobium hymenopterum** Hook.*f.*, **FMP4** 48, **H44** 319, **S20** 375; epiphyte about 30 cm long; montane forest; about 1100 m; once from Gg Batu Puteh, Pk.

233.44.32 **Dendrobium incurvum** Lindl., **S20** 401; *Dendrobium eriaeflorum auct. non* Griff., **FMP4** 51, **H44** 311; epiphyte about 20 cm tall; hill forest; once on Bt Wang, Kd.

233.44.33 **Dendrobium indivisum** (Blume) Miq., **H44** 332, **S20** 413; *Dendrobium eulophotum* Lindl., **FMP4** 35; epiphyte about 30 cm tall; lowland forests; widespread.

233.44.34 **Dendrobium indragiriense** Schltr., **H44** 340, **S20** 425; *Dendrobium gemellum* (*non* Lindl.) Ridl., **FMP4** 40 in part; slender epiphyte to 100 cm long; lowland forest; widespread.

233.44.35 **Dendrobium kentrochilum** Hook.*f.*, **FMP4** 50, **S20** 371; epiphyte 20–30 cm long; hill forest; known only from type, Ulu Batang Padang, Pk; endemic.

233.44.36 **Dendrobium kentrophyllum** Hook.*f.*, **FMP4** 39, **H44** 339, **S20** 420; epiphyte about 20 cm long; montane forest; about 1200 m; Pk, Ph, Sl.

233.44.37 **Dendrobium lamellatum** (Blume) Lindl., **FMP4** 46, **H44** 317, **S20** 373; flat-stemmed epiphyte to 12 cm long; lowland forest; widespread but uncommon.

233.44.38 **Dendrobium lampongense** J.J.Sm., **H44** 312, **S20** 381; epiphyte about 65 cm long; lowland forest; Kd, NS.

233.44.39 **Dendrobium lankaviense** Ridl., **H44** 320, **S20** 378; epiphyte about 30 cm long; twice collected on P. Langkawi; endemic.

233.44.40 **Dendrobium leonis** (Lindl.) Rchb.*f.*, **FMP4** 37, **H44** 334, **S20** 417; epiphyte to 25 cm tall; on lowland trees; widespread and common.

233.44.41 **Dendrobium linguella** Rchb.*f.*, **H44** 290 in part, **S20** 391; *Dendrobium hercoglossum* (*non* Rchb.*f.*) Ridl., **FMP4** 45 in part; wiry-stemmed epiphyte to 60 cm tall; probably widespread.

233.44.42 **Dendrobium lobatum** (Blume) Miq., **FMP4** 36, **H44** 332, **S20** 413; pendulous epiphyte to 100 cm long; lowland trees, especially those near rivers; widespread.

233.44.43 **Dendrobium lobbii** Teijsm. & Binn., **H44** 342, **S20** 427; *Dendrobium calcaratum* Lindl., *nom. illeg.*, **FMP4** 39; slender herb to 70 cm tall; beds of lowland forest streams; commoner in the south.

233.44.44 **Dendrobium mannii** Ridl., **H44** 333, **S20** 415; *Dendrobium terminale* (*non* C.S.P. Parish & Rchb.*f.*) Ridl., **FMP4** 36; epiphyte to 15 cm long; lowland and hill forest; Ml, Jh.

233.44.45 **Dendrobium megaceras** Hook.*f.*, **FMP4** 50, **H44** 319, **S20** 375; epiphyte about 60 cm long; lowlands; Ph, Ml, Jh (one collection each); endemic.

233.44.46 **Dendrobium metachilinum** Rchb.*f.*, **FMP4** 44, **H44** 323, **S20** 397; epiphyte to 35 cm long; lowland forest; commoner in the south.

233.44.47 **Dendrobium metrium** Kraenzl., **FMP4** 45, **H44** 314, **S20** 368; ? herb; in the hills; once from Penang Hill and once from Semangkok, Sl; endemic.

233.44.48 **Dendrobium microglaphys** Rchb.*f.*, **S20** 389; *Dendrobium callibotrys* Ridl., **FMP4** 44, **H44** 287; erect terrestrial or pendulous epiphyte 20–60 cm long; lowlands; commoner in the south.

233.44.49 **Dendrobium pachyglossum** C.S.P. Parish & Rchb.*f.*, **FMP4** 40, **H44** 342, **S20** 429; pendulous epiphyte to 50 cm long; montane forest; several localities.

233.44.50 **Dendrobium pachyphyllum** (Kuntze) Bakh.*f.*, **S20** 363; *Dendrobium pumilum* Roxb., **FMP4** 34, **H44** 275; tiny epiphyte to 5 cm tall forming dense mats; on lowland trees; common throughout.

233.44.51 **Dendrobium pahangense** Carr, **H44** 322, **S20** 397; epiphyte about 20 cm long; montane forest; Fraser's Hill and Gg Tahan, Ph; endemic.

233.44.52 **Dendrobium pandaneti** Ridl., **FMP4** 44, **H44** 324, **S20** 395; epiphyte to 35 cm long; on lowland palms and pandans; commoner in the south.

233.44.53 **Dendrobium panduriferum** Hook.*f.*, **S20** 375; *Dendrobium virescens* Ridl., **FMP4** 47; *Dendrobium serpens* (Hook.*f.*) Hook.*f.*, **FMP4** 47, **H44** 319; epiphyte to 60 cm long; Pk, Ph.

233.44.54 **Dendrobium peculiare** J.J.Sm., **S20** 402, **H44** 325; epiphyte about 30 cm long; montane forest; known only from the Cameron Highlands, Ph.

233.44.55 **Dendrobium pensile** Ridl., **FMP4** 40, **H44** 340, **S20** 425; pendulous epiphyte to 120 cm long; on old mangrove and riverside trees; Ph, Jh, Sp.

233.44.56 **Dendrobium planibulbe** Lindl., **FMP4** 41 in part, **H44** 328 in part, **S20** 407; epiphyte about 40 cm tall; Tg, Pk.

233.44.57 **Dendrobium procumbens** Carr, **H44** 275, **S20** 364; tufted procumbent epiphyte; montane forest; known only from the Cameron Highlands, Ph; endemic.

233.44.58 **Dendrobium prostratum** Ridl., **FMP4** 38, **H44** 334, **S20** 415; creeping epiphyte; lowland trees; widespread.

233.44.59 **Dendrobium pulchellum** Roxb. *ex* Lindl., **H44** 293, **S20** 383; *Dendrobium dalhousieanum* Wall., **FMP4** 52; epiphyte 1–2 m long; on lofty lowland trees; collected wild once at Chan Chu Kang, Sp.

233.44.60 **Dendrobium quadrilobatum** Carr, **H44** 332, **S20** 413; epiphyte to 30 cm long; lowland forest; Tg, Ph; endemic.

233.44.61 **Dendrobium revolutum** Lindl., **FMP4** 43 in part, **H44** 323 in part, **S20** 399; epiphyte 40–60 cm long; lowland trees; Jh, Sp; endemic.

233.44.62 **Dendrobium rhodostele** Ridl., **FMP4** 35, **H44** 331, **S20** 411; epiphyte about 45 cm long; on lowland forest trees by rivers; Tg, Ph.

233.44.63 **Dendrobium roseatum** Ridl., **FMP4** 48, **H44** 320, **S20** 382; *Dendrobium clarissimum* Ridl., **FMP4** 49; epiphyte about 60 cm long; montane forest at about 1300 m, near streams; endemic.

233.44.64 **Dendrobium rosellum** Ridl., **FMP4** 35, **H44** 331, **S20** 411; epiphyte about 45 cm long; on lowland riverside trees; Jh.

233.44.65 **Dendrobium rupicolum** Ridl., **FMP4** 42, **S20** 397; *Dendrobium distichophyllum* A.D. Hawkes & A.H. Heller, **H44** 322; about 35 cm long; on rocks or trees in the mountains; Main Range and Gg Tahan; endemic.

233.44.66 **Dendrobium salaccense** (Blume) Lindl., **H44** 341, **S20** 427; *Dendrobium gemellum* (*non* Lindl.) Ridl., **FMP4** 40 in part; slender epiphyte to 100 cm long; lowland forest; widespread.

233.44.67 **Dendrobium sanguinolentum** Lindl., **FMP4** 50, **H44** 314, **S20** 371; epiphyte about 60 cm long; hill forest; widespread.

233.44.68 **Dendrobium secundum** (Blume) Lindl., **FMP4** 46, **H44** 316, **S20** 373; epiphyte to 1 m long; lowland epiphyte, often on exposed trees near the sea; commoner in the north.

233.44.69 **Dendrobium setifolium** Ridl., **H44** 326, **S20** 403; *Dendrobium gracile* [*non* (Blume) Lindl.] Ridl., **FMP4** 41; slender epiphyte to 40 cm long; lowland forest; Ph, Sp.

233.44.70 **Dendrobium singaporense** A.D. Hawkes & A.H. Heller, **H44** 337, **S20** 420; *Dendrobium teres* (*non* Roxb.) Lindl., **FMP4** 38; epiphyte about 40 cm long; lowland and hill forest; Kd, Pn, Pk, Ph, Sl, Sp.

233.44.71 **Dendrobium sinuatum** (Lindl.) Lindl. *ex* Rchb.*f.*, **FMP4** 37, **H44** 335, **S20** 419; pendulous epiphyte about 25 cm long; lowlands and mountains; widespread.

233.44.72 **Dendrobium spegidoglossum** Rchb.*f.*; **S20** 393; *Dendrobium flavidulum* Ridl. *ex* Hook.*f.*, **FMP4** 45, **H44** 311; epiphyte about 60 cm long; on old mangrove trees; Kl, Pn, Sp.

233.44.73 **Dendrobium spurium** (Blume) J.J.Sm., **H44** 277, **S20** 365; *Dendrobium euphlebium* Rchb.*f. ex* Lindl., **FMP4** 44; about 30 cm long; on limestone rocks or old mangrove trees; widespread though more frequent in the south.

233.44.74 **Dendrobium striatellum** Carr, **H44** 275, **S20** 363; small, tufted epiphyte about 7 cm tall; Gua Musang, Kl, and Merapok, Ph; endemic.

233.44.75 **Dendrobium stuartii** F.M. Bailey, **S20** 389; *Dendrobium tetrodon auct. non* Rchb.*f. ex* Lindl., **FMP4** 45, **H44** 293; pendulous epiphyte about 30 cm long; on exposed lowland trees; widespread.

233.44.76 **Dendrobium subflavidum** Ridl., **FMP4** 49, **H44** 320, **S20** 378; *Dendrobium chloroleucum* Ridl., **FMP4** 49; epiphyte to 70 cm long; exposed places in montane forest at about 1500 m; Tg, Pk, Ph; endemic.

233.44.77 **Dendrobium subulatum** (Blume) Lindl., **FMP4** 39, **H44** 339, **S20** 423; epiphyte about 10 cm tall; on sheltered lowland trees; widespread.

233.44.78 **Dendrobium terminale** C.S.P. Parish & Rchb.*f.*, **S20** 415; epiphyte 10–15 cm long; one dubious report from Ml.

233.44.79 **Dendrobium tortile** Lindl., **FMP4** 52, **H44** 294, **S20** 383; *Dendrobium haniffii* Ridl., **FMP4** 51; epiphyte 20–30 cm long; Kd, Kl, Pn, Ph.

233.44.80 **Dendrobium trinervium** Ridl., **FMP4** 51, **S20** 395; tufted epiphyte to 8 cm tall; montane forest; known only from Gg Jerai, Kd.

233.44.81 **Dendrobium tropaeoliflorum** Hook.*f.*, **FMP4** 49, **H44** 319, **S20** 375; described from plant from Pk; endemic.

233.44.82 **Dendrobium truncatum** Lindl., **FMP4** 41, **H44** 327, **S20** 403; epiphyte about 30 cm long; lowlands; Kd, Pk, Ph, Sl.

233.44.83 **Dendrobium uniflorum** Griff., **FMP4** 43, **H44** 323, **S20** 399; *Dendrobium revolutum auct. non* Lindl., **FMP4** 43 in part, **H44** 322 in part; epiphyte around 40 cm long; lowlands; widespread.

233.44.84 **Dendrobium ustulatum** Carr., **H44** 275, **S20** 364; procumbent epiphyte; montane forest; about 1200 m; Ph, Sl.

233.44.85 **Dendrobium villosulum** Lindl., **FMP4** 40, **S20** 429; *Dendrobium melanochlamys* Lindl., **H44** 342; terrestrial to 1 m tall; on dead leaves in lowland and montane forest; widespread.

233.44.86 **Dendrobium viridulum** Ridl., **S20** 425; epiphyte; Kd, Ph.

233.45.1 **Dendrochilum angustifolium** Ridl., **FMP4** 82, **H44** 234, **S20** 191; creeping epiphyte about 10 cm tall; montane forest on exposed ridges; Pk, Ph.

233.45.2 **Dendrochilum carnosum** (Ridl.) Holttum, **H44** 231, **S20** 187; *Platyclinis carnosa* Ridl., **FMP4** 26; creeping epiphyte; exposed montane forest at 1350–2100 m; several localities; endemic.

233.45.3 **Dendrochilum crassum** Ridl., **FMP4** 82, **H44** 234, **S20** 191; creeping epiphyte; montane forest; collected once on the Taiping Hills, Pk.

233.45.4 **Dendrochilum ellipticum** Ridl., **FMP4** 83, **H44** 234, **S20** 191; creeping epiphyte; lowland forest; Kl, Ph, Jh, Sp.

233.45.5a **Dendrochilum gracile** (Hook.*f.*) J.J.Sm. var. **angustifolia** (Ridl.) Holttum, **H44** 233, **S20** 188; *Platyclinis gracilis* Hook.*f.* var. *angustifolia* Ridl., **FMP4** 25; creeping epiphyte; montane forest; about 1500 m; Pk, Ph; endemic variety.

233.45.5b **Dendrochilum gracile** (Hook.*f.*) J.J.Sm. var. **gracile**, **H44** 233, **S20** 187; *Platyclinis gracilis* Hook.*f.*, **FMP4** 25; creeping epiphyte; montane forest at about 1200 m; Pk, Ph, Sl.

233.45.6 **Dendrochilum gramineum** (Ridl.) Holttum, **H44** 233, **S20** 188; *Platyclinis graminea* Ridl., **FMP4** 26; creeping epiphyte; montane forest; Pk, Ph; endemic.

233.45.7 **Dendrochilum kingii** (Hook.*f.*) J.J.Sm., **H44** 229, **S20** 185; *Platyclinis kingii* Hook.*f.*, **FMP4** 27; *Platyclinis sarawakensis* Ridl., **FMP4** 27; creeping epiphyte; montane forest; Pk.

233.45.8 **Dendrochilum linearifolium** Hook.*f.*, **H44** 232, **S20** 187; *Platyclinis linearifolia* (Hook.*f.*) Ridl., **FMP4** 25; *Platyclinis pulchella* Ridl., **FMP4** 26; creeping on trees and rocks; on mountains at 1200–2100 m; quite widespread.

233.45.9 **Dendrochilum longifolium** Rchb.*f.*, **H44** 229, **S20** 185; *Platyclinis longifolia* (Rchb.*f.*) Hemsl., **FMP4** 25; creeping epiphyte; on old mangrove trees; Ph southward.

233.45.10 **Dendrochilum odoratum** (Ridl.) J.J.Sm., **H44** 231, **S20** 187; *Platyclinis odorata* Ridl., **FMP4** 26; epiphyte; montane forest at 1200–1500 m; Kd, Pk, Ph; endemic.

233.45.11 **Dendrochilum pallideflavens** Blume, **S20** 189; *Dendrochilum album* Ridl., **FMP4** 82, **H44** 234; epiphyte about 15 cm tall; lowlands and mountains; widespread.

233.45.12 **Dendrochilum simile** Blume, **H44** 231, **S20** 185; *Platyclinis linearis* Ridl., **FMP4** 26; terrestrial; montane forest; Kd, Ph.

233.45.13 **Dendrochilum spathulatum** Ridl., **FMP4** 82, **H44** 234, **S20** 190; epiphyte; lowlands and mountains; Pk, Ph, Jh.

233.46.1 **Didymoplexiella ornata** (Ridl.) Garay, **S20** 138; *Leucolaena ornata* Ridl., **FMP4** 207 incl. var. *singapurensis* Ridl.; *Didymoplexis ornata* (Ridl.) J.J.Sm., **H44** 108; tuberous leafless saprophyte 20–80 cm tall; lowland forest; Pk southward.

233.47.1 **Didymoplexis pallens** Griff., **FMP4** 206, **H44** 109, **S20** 139; leafless saprophyte to 12 cm tall; lowland forest; quite widespread.

233.48.1 **Diglyphosa latifolia** Blume, **FMP4** 112, **H44** 177, **S20** 536; creeping herb about 50 cm tall; montane forest; Pk, Ph, Sl.

233.49.1 **Dilochia cantleyi** (Hook.*f.*) Ridl., **FMP4** 127, **H44** 190, **S20** 148; herb to 2 m tall; *Sphagnum* peat bogs in the mountains; several localities.

233.49.2 **Dilochia wallichii** Lindl., **FMP4** 126, **H44** 190, **S20** 148; plant to 1.5 m tall; on rocks or sometimes trees; lowlands and hills; several localities.

233.50.1 **Diplocaulobium longicolle** (Lindl.) Kraenzl, **FMP4** 27, **S20** 348; *Dendrobium longicolle* Lindl., **H42** 263; epiphyte, occasionally terrestrial, to 40 cm tall; often on old mangrove trees; south of Peninsula.

233.51.1 **Dipodium paludosum** (Griff.) Rchb.*f*, **FMP4** 148, **H44** 515, **S20** 555; tufted herb to 1 m tall; open sandy places near the sea; Ph, Ml, Sp.

233.51.2 **Dipodium parviflorum** J.J.Sm., **H44** 513, **S20** 555; long climbing from ground using adpressed roots; lowland forest; once from Sungkap F.R., Kd.

233.51.3 **Dipodium pictum** (Lindl.) Rchb.*f.*, **FMP4** 147, **H44** 513, **S20** 553; long climbing from ground using adpressed roots; lowland and montane forest; widespread.

233.51.4 **Dipodium scandens** (Blume) J.J.Sm., **S20** 555; long climbing from ground using adpressed roots; lowland and montane forest; Pn, Sl, Ml.

233.52.1 **Doritis pulcherrima** Lindl., **FMP4** 158, **S20** 585; *Phalaenopsis pulcherrima* (Lindl.) J.J.Sm., **H44** 671; herb to 30 cm tall; sandy heaths; P. Langkawi, Kd, Tg.

233.53.1 **Epigeneium geminatum** (Blume) Summerh., **S20** 351; *Sarcopodium geminatum* (Blume) Rolfe, **FMP4** 28; *Dendrobium geminatum* (Blume) Lindl., **H44** 273; creeping epiphyte or epiplith about 10 cm tall; on high exposed mountain ridges; many localities.

233.53.2 **Epigeneium longipes** (Hook.*f.*) Summerh., **S20** 348; *Sarcopodium longipes* (Hook.*f.*) Rolfe, **FMP4** 28; *Dendrobium longipes* Hook.*f.*, **H44** 272; creeping epiphyte or epiplith about 15 cm tall; on high exposed mountain ridges; many localities.

233.53.3 **Epigeneium macropodum** (Hook.*f.*) Summerh., **S20** 351; *Sarcopodium macropodum* (Hook.*f.*) Rolfe, **FMP4** 28; *Dendrobium macropodum* Hook.*f.*, **H44** 273; creeping epiphyte or epiplith about 15 cm tall; on high exposed mountain ridges; many localities.

233.53.4 **Epigeneium zebrinum** (J.J.Sm.) Summerh., **S20** 351; *Sarcopodium citrinocastaneum* (Burkill) Ridl., **FMP4** 29; *Dendrobium zebrinum* J.J.Sm., **H44** 274; creeping epiphyte about 30 cm tall; lowland forests; Kl, Ph, Jh.

233.54.1 **Epipogium roseum** (D. Don) Lindl., **H44** 107, **S20** 141; leafless saprophyte to 80 cm tall; montane forest; once at the Cameron Highlands, Ph.

233.55.1 **Eria appendiculata** (Blume) Lindl., **H44** 389, **S20** 298; *Eria carunculata* Ridl., **FMP4** 94; epilith about 15 cm tall; high mountains at about 2000 m; Pk, Ph.

233.55.2 **Eria atrovinosa** Carr, **H44** 388, **S20** 295; epiphyte about 15 cm tall; lowland and montane forest; Ph, Sl, Ml; endemic.

233.55.3 **Eria bicristata** (Blume) Lindl., **H44** 391, **S20** 301; epiphyte about 20 cm tall; lowland forest; once from Sg Sat, Ph.

233.55.4 **Eria biflora** Griff., **H44** 372, **S20** 293; epiphyte to 25 cm tall; lowland forest; Kl, Ph.

233.55.5 **Eria bractescens** Lindl., **FMP4** 91, **H44** 388, **S20** 295; epiphyte about 15 cm tall; montane forest and lowland trees near rivers or the sea; widespread, though more frequent in the south.

233.55.6 **Eria cepifolia** Ridl., **FMP4** 90, **H44** 383, **S20** 283; about 15 cm tall; limestone areas; Kl, Pk.

233.55.7 **Eria citrina** Ridl., **FMP4** 87, **H44** 366, **S20** 281; clumped epiphyte to 60 cm tall; montane forest; Tg, Pk, Ph, Sl.

233.55.8 **Eria clavata** Holttum, **H44** 391, **S20** 301; epiphyte to 10 cm tall; montane forest; known only from Fraser's Hill, Ph; endemic.

233.55.9 **Eria crassipes** Ridl., **FMP4** 97, **H44** 382, **S20** 287; *Eria reptans* Ridl., **FMP4** 97; *Eria crassifolia* Ridl., **FMP4** 98; terrestrial or epiphytic to 30 cm tall; exposed mountain ridges; several localities.

233.55.10 **Eria dasystachys** Ridl., **FMP4** 98, **H44** 390, **S20** 298; epiphyte to 15 cm tall; lowland forest; known only from type, Pekan, Ph; endemic.

233.55.11 **Eria densa** Ridl., **FMP4** 90, **H44** 384, **S20** 285; thick-stemmed epiphyte to 50 cm tall; montane forest at 1300–2000 m; many places.

233.55.12 **Eria diluta** Ridl., **FMP4** 95, **H44** 369, **S20** 291; epiphyte to 20 cm tall; hill forest; Kd, Pn; endemic.

233.55.13 **Eria earine** Ridl., **FMP4** 88, **H44** 383, **S20** 283; epiphyte about 10 cm tall; montane forest; Gg Tahan and Cameron Highlands, Ph; endemic.

233.55.14 **Eria elata** Hook.*f.*, **FMP4** 96, **H44** 388, **S20** 295; epiphyte about 30 cm tall; montane forest; Pk, Sl; endemic.

233.55.15 **Eria flavescens** (Blume) Lindl., **H44** 396, **S20** 306; epiphyte to 30 cm tall; montane forest; Cameron Highlands, Ph.

233.55.16 **Eria floribunda** Lindl., **FMP4** 89, **H44** 384, **S20** 285; epiphyte to 30 cm long; lowlands and hills to 1300 m; widespread.

233.55.17 **Eria hyacinthoides** (Blume) Lindl., **H44** 390, **S20** 298; *Eria endymion* Ridl., **FMP4** 91; fleshy epiphyte about 20 cm tall; lowlands and hills; Kl, Tg, Pk, Sl, Sp.

233.55.18 **Eria iridifolia** Hook.*f.*, **FMP4** 86, **S20** 279; *Eria bidens* Ridl., **FMP4** 86; *Eria latifolia* (Blume) Rchb.*f.*, *nom. illeg.*, **H44** 365; plant to 30 cm tall; on rocks and trees in the mountains above 1200 m; widespread.

233.55.19 **Eria javanica** (Sw.) Blume, **H44** 377, **S20** 271; *Eria stellata* Lindl., **FMP4** 96; *Eria striolata* Rchb.*f.*, **FMP4** 96; epiphyte to about 60 cm tall; lowland forests; widespread.

233.55.20 **Eria lamonganensis** Rchb.*f.*, **H44** 396, **S20** 305; *Eria carnea* (*non* J.J.Sm.) Ridl., **FMP4** 93; epiphyte to 25 cm long; montane forest; Fraser's Hill and Cameron Highlands, Ph.

233.55.21 **Eria lasiopetala** (Willd.) Ormerod, **S19** 22; *Eria albidotomentosa* (Blume) Lindl., **FMP4** 98, **H44** 375; *Eria pubescens* (Hook.) Steud., **S20** 277; epiphyte to 40 cm tall; Pk northwards.

233.55.22 **Eria latibracteata** Ridl., **S20** 305; *Eria braddonii* Rolfe, **FMP4** 92, **H44** 395; epiphyte to 20 cm long; lowland and hill forest; Ph, Sl, NS.

233.55.23 **Eria lancifolia** Hook.*f.*, **FMP4** 85, **H44** 392, **S20** 303; creeping epiphyte to 30 cm tall; on riverside trees; Pk, Ph, Jh.

233.55.24 **Eria leiophylla** Lindl., **FMP4** 99, **H44** 379, **S20** 275; creeping epilith to 15 cm tall; in the hills; Tg, Pn, Pk.

233.55.25 **Eria longerepens** Ridl., **FMP4** 95, **H44** 372, **S20** 293; long-creeping epiphyte to 30 cm tall; on mangrove trees; south of Peninsula.

233.55.26 **Eria maingayi** Hook.*f.*, **FMP4** 92, **H44** 390, **S20** 301; epiphyte to 10 cm tall; hill forest; Kl, Pn, Ph; endemic.

233.55.27 **Eria mucronata** Lindl., **S20** 289; *Eria pendula* Ridl., **FMP4** 89; *Eria rigida* Blume, **H44** 371; pendulous to 100 cm long; on limestone rocks or trees; widespread.

233.55.28 **Eria neglecta** Ridl., **FMP4** 95, **H44** 368, **S20** 293; epiphyte to 30 cm tall; often on mangrove or riverside trees; widespread.

233.55.29 **Eria nutans** Lindl., **FMP4** 94, **H44** 368, **S20** 291; epiphyte to 30 cm tall; lowlands and hills, often near rivers; widespread.

233.55.30 **Eria obliqua** (Lindl.) Lindl., **FMP4** 86, **H44** 365, **S20** 279; tufted epiphyte to 10 cm tall; on mangrove and riverside trees; in the south.

233.55.31 **Eria oblitterata** (Blume) Rchb.*f.*, **S20** 281; *Eria tahanensis* Ridl., **FMP4** 87; *Eria ridleyi* Rolfe, **FMP4** 87, **H44** 366; *Eria larutensis* Ridl., **FMP4** 86; epiphyte about 50 cm tall; montane forest at 1200–1800 m; widespread.

233.55.32 **Eria ornata** (Blume) Lindl., **H44** 375, **S20** 277; epiphyte to 50 cm tall; extreme north.

233.55.33 **Eria pachystachya** Lindl., **H44** 384, **S20** 283; thick-stemmed epiphyte to 30 cm long; montane forest at 1300–1700 m; Pk, Ph, Sl.

233.55.34 **Eria pannea** Lindl., **FMP4** 99, **H44** 380, **S20** 273; creeping epiphyte to 15 cm tall; on lowland trees; common in the south.

233.55.35 **Eria pellipes** Hook.*f.*, **S20** 273; *Eria teretifolia* (*non* Griff.) Griff., **FMP4** 99, **H44** 379; creeping epiphyte to 15 cm tall; montane forest to 1300 m; common, widespread.

233.55.36 **Eria pilifera** Ridl., **FMP4** 89, **H44** 369, **S20** 289; drooping epiphyte; montane forest at 1000–1300 m; Pk, Ph.

233.55.37 **Eria pudica** Ridl., **FMP4** 85, **H44** 391, **S20** 303; epiphyte about 15 cm tall; on old mangrove and riverside trees; Jh, Sp.

233.55.38 **Eria pulchella** Lindl., **H44** 372, **S20** 275; *Tylostylis rigida* (*non* Blume) Ridl., **FMP4** 104; creeping epiphyte to 20 cm tall; lowlands; widespread, common.

233.55.39 **Eria punctata** J.J.Sm., **H44** 389, **S20** 296; creeping epiphyte about 20 cm tall; montane forest; Bukit Fraser and Ulu Kali, Ph.

233.55.40 **Eria ramulosa** Ridl., **FMP4** 94, **H44** 393, **S20** 305; creeping epiphyte; montane forest; once from Taiping Hills, Pk; endemic.

233.55.41 **Eria recurvata** Hook.*f.*, **FMP4** 92, **H44** 391, **S20** 301; stout fleshy epiphyte to 15 cm tall; poorly known, original collection from Pk; endemic.

233.55.42 **Eria robusta** (Blume) Lindl., **H44** 381, **S20** 286; *Eria aeridostachya* Rchb.*f.* *ex* Lindl., **FMP4** 96; *Eria brunea* Ridl., **FMP4** 97; *Eria linearifolia* Ridl., **FMP4** 97; *Eria lorifolia* Ridl., **FMP4** 98; epiphyte to 40 cm tall; montane forest, occasionally in the lowlands; widespread.

233.55.43 **Eria saccifera** Hook.*f.*, **FMP4** 92, **H44** 387, **S20** 294; *Eria saccata* Ridl., **FMP4** 90, **H44** 387; epiphyte to 20 cm tall; montane forest; Gg Batu Puteh and Gg Korbu, Pk.

233.55.44 **Eria scortechinii** Hook.*f.*, **FMP4** 88, **H44** 363, **S20** 271; plant to 120 cm tall; on trees or unshaded rocks in the mountains at 1700–2000 m; quite widespread; endemic.

233.55.45 **Eria suaveolens** Ridl., **FMP4** 91, **H44** 388, **S20** 295; fleshy epiphyte to 12 cm long; lowland and hill forest; Pk, Ph, Jh; endemic.

233.55.46 **Eria tenuiflora** Ridl., **FMP4** 90, **H44** 393, **S20** 306; epiphyte to 30 cm tall; lowland and hill forest to 1050 m; widespread.

233.55.47 **Eria valida** Lindl., **S19** 21; *Eria leptocarpa* Hook.*f.*, **FMP4** 88, **H44** 370, **S20** 289; large epiphyte to 120 cm tall; lowland and hill forest; Pk, Ph, Sl.

233.55.48 **Eria xanthocheila** Ridl., **FMP4** 91, **H44** 393, **S20** 303; thick-stemmed epiphyte to 30 cm long; on riverside trees; chiefly in the south.

233.56.1 **Erythrodes blumei** (Lindl.) Schltr., **S20** 55; *Erythrodes brevicalcar* J.J.Sm., **H44** 119; herb to 60 cm tall; montane forest; collected once at Fraser's Hill, Ph.

233.56.2 **Erythrodes latifolia** Blume, **S20** 55, **H44** 118; *Physurus latifolius* (Blume) Blume, **FMP4** 210; *Physurus humilis* Blume, **FMP4** 210; *Erythrodes humilis* (Blume) J.J.Sm., **H44** 119; herb to 60 cm tall; hill forest; Pk, Ph, Sl.

233.57.1 **Erythrorchis altissima** (Blume) Blume, **S20** 132; *Galeola altissima* (Blume) Rchb.*f.*, **FMP4** 203, **H44** 99 in part; scale-leaved saprophyte, much-branched and long-climbing; lowland forest; several localities.

233.57.2 **Erythrorchis ochobiensis** (Hayata) Garay, **S20** 132; *Galeola altissima* [*non* (Blume) Rchb.*f.*] Holttum, **H44** 99 in part; scale-leaved saprophyte, much-branched and long-climbing; possibly recorded from Pn.

233.58.1 **Eulophia andamanensis** Rchb.*f.*, **S20** 539; *Eulophia keithii* Ridl., **FMP4** 142, **H44** 536; herb to 40 cm tall; often on limestone; Ps, Kd, Pn.

233.58.2 **Eulophia bicallosa** (D. Don) P.F. Hunt & Summerh., **S20** 541; *Eulophia bicarinata* (Lindl.) Hook.*f.*, **H44** 534; herb about 60 cm tall; once from NS.

233.58.3 **Eulophia graminea** Lindl., **FMP4** 41, **H44** 534, **S20** 539; weedy herb to 80 cm tall; open places in the lowlands; widespread, common.

233.58.4 **Eulophia spectabilis** (Dennst.) Suresh, **S20** 541; *Eulophia squalida* Lindl., **FMP4** 141, **H44** 537; herb to 1 m tall; open or lightly shaded places including plantations; widespread and common.

233.58.5 **Eulophia zollingeri** (Rchb.*f.*) J.J.Sm., **H44** 534, **S20** 539; *Eulophia macrorrhiza* Blume, **FMP4** 142; leafless saprophyte to 60 cm tall; lowland forest; Pk.

233.59.1 **Flickingeria angustifolia** (Blume) A.D. Hawkes, **S20** 359; *Desmotrichum kelsallii* (Ridl.) Ridl., **FMP4** 30; *Desmotrichum ardenii* (Ridl.) Ridl., **FMP4** 30; *Dendrobium kelsallii* Ridl., **H44** 270 in part; tufted epiphyte to 40 cm long; lowlands and mountains; widespread.

233.59.2 **Flickingeria appendiculata** (Blume) A.D. Hawkes, **S20** 357; *Desmotrichum bifidum* (Ridl.) Kraenzl., **FMP4** 31; *Dendrobium bifidum* Ridl., **H44** 267; large plant; presence uncertain; Ridley's type possibly from P. Langkawi.

233.59.3 **Flickingeria bancana** (J.J. Sm.) A.D. Hawkes, **S20** 360; *Desmotrichum lonchophyllum* [*non* (Hook.*f.*) Kraenzl.] Ridl., **FMP4** 29 in part; *Dendrobium kelsallii* (*non* Ridl.) Holttum, **H44** 270 in part; tufted epiphyte; lowland forests; widespread.

233.59.4 **Flicklingeria comata** (Blume) A.D. Hawkes, **S20** 352; *Desmotrichum criniferum* Lindl., **FMP4** 30; *Dendrobium comatum* (Blume) Lindl., **H44** 266; much-branched epiphyte to 60 cm tall; lowland forests including mangroves; south of Peninsula.

233.59.5 **Flickingeria convexa** (Blume) A.D. Hawkes, **S20** 357; *Dendrobium convexum* (Blume) Lindl., **H44** 270; creeping epiphyte hardly 5 cm tall; Pontian, Jh and ?Ulu Kali, Sl.

233.59.6 **Flickingeria fimbriata** (Blume) A.D. Hawkes, **S20** 355; *Desmotrichum fimbriatum* Blume, **FMP4** 30; *Dendrobium plicatile* Lindl., **H44** 267; large much-branched epiphyte; lowland and hill forest; widespread.

233.59.7 **Flickingeria forcipata** (Kraenzl.) A.D. Hawkes, **S20** 359; *Dendrobium padangense* Schltr., **H44** 269; creeping epiphyte; Pk, Ph, Sl.

233.59.8 **Flickingeria laciniosa** (Ridl.) A.D. Hawkes, **S20** 355; *Desmotrichum lacinosum* (Ridl.) Kraenzl., **FMP4** 31; *Dendrobium laciniosum* Ridl., **H44** 267; epiphyte about 30 cm long; probably on mangroves; known only from type; P. Seletar, Sp; endemic.

233.59.9 **Flickingeria luxurians** (J.J.Sm.) A.D. Hawkes, **S20** 357; *Dendrobium luxurians* J.J.Sm., **H44** 267; straggling epiphyte; lowland forest; Tembeling, Ph.

233.59.10 **Flickingeria pallens** (Ridl.) A.D. Hawkes, **S20** 355; plant 30–40 cm high; poorly known; one record from P. Langkawi.

233.59.11 **Flickingeria xantholeuca** (Rchb.*f.*) A.D. Hawkes, **S20** 359; *Desmotrichum lonchophyllum* Hook.*f.*, **FMP4** 29 in part; *Desmotrichum pallidiflorum* (Ridl.) Ridl., **FMP4** 31; *Dendrobium xantholeucum* Rchb.*f.*, **H44** 270; much-branched epiphyte 15–30 cm tall; lowland trees including mangroves; P. Langkawi, Pk, Ph, Jh, Sp.

233.60.1 **Galeola nudifolia** Lour., **S20** 130; *Galeola hydra* Rchb.*f.*, **FMP4** 202; *Galeola kuhlii* (Rchb.*f.*) Rchb.*f.*, **H44** 99; scale-leaved saprophyte climbing using adpressed roots; open places in lowland and hill forest to 1200 m; widespread.

233.61.1 **Gastrochilus calceolaris** (Buch.-Ham. *ex* Sm.) D. Don, **H44** 661, **S20** 689; *Saccolabium bigibbum* (*non* Rchb.f. *ex* Hook.*f.*) Ridl., **FMP4** 165; short-stemmed epiphyte; montane forest; Pk, Ph.

233.61.2 **Gastrochilus patinatus** (Ridl.) Schltr., **H44** 661, **S20** 691; *Saccolabium patinatum* Ridl., **FMP4** 165; fleshy-leaved epiphyte; lowland forest; Pk, Ph.

233.62.1 **Gastrodia javanica** (Blume) Lindl., **H44** 110, **S20** 140; *Gastrodia hasseltii* Blume, **FMP4** 208; *Gastrodia malayana* Ridl., **FMP4** 207; leafless tuberous saprophyte to 70 cm tall; lowland forest; several localities.

233.62.2 **Gastrodia verrucosa** Blume, **S20** 141; *Gastrodia holttumii* Carr, **H44** 110; leafless tuberous saprophyte to 10 cm tall; lowland forest; Ph, Jh (one collection each).

233.63.1 **Geodorum citrinum** G.Jacks., **FMP4** 143, **H44** 539, **S20** 545; herb to 50 cm tall; lowland forest; Kd, Pk, Jh.

233.63.2 **Geodorum densiflorum** (Lam.) Schltr., **S20** 543; *Geodorum purpureum* (*non* R.Br.) Ridl., **FMP4** 142, **H44** 539; herb about 50 cm tall; open grassy places; Ml northward.

233.64.1 **Goodyera bifida** (Blume) Blume, **S20** 63; *Goodyera foliosa auct. non* (Lindl.) Benth. *ex* Hook.*f.*, **FMP4** 220, **H44** 123; herb 15–25 cm tall; hill forest; Pk, Ph.

233.64.2 **Goodyera colorata** (Blume) Blume, **H44** 122, **S20** 61; herb 10–15 cm tall; one doubtful record from Tembeling, Ph.

233.64.3 **Goodyera hispida** Lindl., **H44** 123, **S20** 61; herb about 20 cm tall; on limestone hills at 500 m; Gua Panjang and Gua Nenek, Kl.

233.64.4 **Goodyera lanceolata** Ridl., **FMP4** 220, **H44** 122, **S20** 59; herb about 22 cm tall; montane forest; poorly known; type from The Gap, Sl; endemic.

233.64.5 **Goodyera pusilla** Blume, **FMP4** 219, **H44** 123, **S20** 61; herb about 10 cm tall; rare; Kd, Pk.

233.64.6 **Goodyera rubicunda** (Blume) Lindl., **H44** 122, **S20** 59; *Goodyera rubens* Blume, **FMP4** 220; herb to 60 cm tall; in forest; Ulu Batang Padang, Pk, and Gg Panti, Jh.

233.64.7 **Goodyera viridiflora** (Blume) Blume, **S20** 61; *Goodyera cordata* (Lindl.) G. Nicolson., **FMP4** 220, **H44** 122; herb to 20 cm tall; hill forest; Gg Jerai, Kd, Penang Hill and Fraser's Hill, Ph.

233.65.1 **Grammatophyllum speciosum** Blume, **FMP4** 149, **H44** 527, **S20** 557; huge clumped epiphyte with stems to 3 m long; often on trees near lowland streams; widespread.

233.65.2 **Grammatophyllum stapeliiflorum** (Teijsm. & Binn.) J.J.Sm., **H44** 529, **S20** 558; *Cymbidium stapeliiflorum* Teijsm. & Binn., **FMP4** 147; epiphyte; montane forest; Taiping Hills, Pk, and Gg Ulu Kali, Ph.

233.66.1 **Grosourdya appendiculata** (Blume) Rchb.*f.*, **S20** 695; *Ascochilus hirtulus* (Hook.*f.*) Ridl., **FMP4** 181; *Sarcochilus appendiculatus* (Blume) J.J.Sm., **H44** 691; small epiphyte about 5 cm tall; often in limestone areas; widespread.

233.66.2 **Grosourdya incurvicalcar** (J.J.Sm.) Garay, **S20** 695; small epiphyte; twice from Ph.

233.66.3 **Grosourdya minutiflora** (Ridl.) Garay, **S20** 695; *Ascochilus minutiflorus* Ridl., **FMP4** 182; *Sarcohilus minutiflorus* (Ridl.) Holttum, **H44** 691; tiny epiphyte; known only from type; Tembeling, Ph; endemic.

233.66.4 **Grosourdya muscosa** (Rolfe) Garay, **S20** 697; *Sarcochilus carrii* L.O. Williams, **H44** 692; epiphyte about 5 cm tall; lowland forests; Ph.

233.67.1 **Habenaria carnea** N.E. Br., **FMP4** 227, **H44** 84, **S20** 116; herb 15–25 cm tall; on limestone; P. Langkawi.

233.67.2 **Habenaria dentata** (Sw.) Schltr., **S20** 113; herb to 60 cm tall; once collected in Pg.

233.67.3 **Habenaria kingii** Hook.*f.*, **FMP4** 228 in part, **H44** 87, **S20** 111; herb 30–50 cm tall; on limestone rocks; Pk; endemic.

233.67.4 **Habenaria medioflexa** Turrill, **S20** 111; small herb; hill forest; Kd.

233.67.5 **Habenaria reflexa** Blume, **H44** 85, **S20** 113; *Habenaria kingii* (*non* Hook.*f.*) Ridl., **FMP4** 228 in part; herb 30–50 cm tall; forest on limestone; Pk, Ph.

233.67.6 **Habenaria rhodocheila** Hance, **H44** 84, **S20** 113; *Habenaria xanthocheila* Ridl., **FMP4** 227; herb 20–30 cm tall; lowland forest; Pn.

233.67.7 **Habenaria rostellifera** Rchb.*f.*, **S20** 113; *Habenaria roseata* Ridl., **FMP4** 228, **H44** 85; herb 30–45 cm tall; lowland forest; Kd, Tg, Pk.

233.67.8 **Habenaria singapurensis** Ridl., **FMP4** 229, **H44** 84, **S20** 109; herb to 1 m tall; lowland swamp forest; Tg, Jh, Sp.

233.68.1 **Herminium lanceum** (Thunb. *ex* Sw.) Vuijk, **S20** 101; herb to 50 cm tall; known only from Mt Austen, Jh.

233.69.1 **Hetaeria alta** Ridl., **FMP4** 221, **H44** 115, **S20** 93; herb about 60 cm tall; hill forests; Pk, Ph.

233.69.2 **Hetaeria anomala** (Lindl.) Hook.*f.*; **S19** 9; *Zeuxine biloba* Ridl., **FMP4** 218, **H44** 134; *Hetaeria biloba* (Ridl.) Seidenf. & J.J. Wood, **S20** 95; herb about 35 cm tall; montane forest; known only from Telom, Ph.

233.69.3 **Hetaeria elata** Hook.*f.*, **FMP4** 222, **H44** 114, **S20** 91; herb 40–60 cm tall; montane forest at 1700–2000 m; Cameron Highlands, Ph; endemic.

233.69.4 **Hetaeria elegans** Ridl., **FMP4** 222, **H44** 115, **S20** 93; herb about 45 cm tall; montane forest; known only from Gg Tahan, Ph; endemic.

233.69.5 **Hetaeria nitida** Ridl., **FMP4** 222, **H44** 116, **S20** 95; herb 20–30 cm tall; lowland forest; Pn, Ph, Sp.

233.69.6 **Hetaeria obliqua** Blume, **FMP4** 221 in part, **H44** 115 in part, **S20** 93; herb 25–35 cm tall; lowland forest; Ph southward.

233.69.7 **Hetaeria oblongifolia** (Blume) Blume, **S20** 93; *Hetaeria obliqua auct. non* Blume, **FMP4** 221 in part, **H44** 115 in part; herb to 40 cm tall; hill forest; Kd, Pn, Pk.

233.69.8 **Hetaeria ophirensis** Ridl., **FMP4** 222, **H44** 114, **S20** 91; herb 45 cm tall; montane forest; known only from type, Gg Tundok, Ml; endemic.

233.69.9 **Hetaeria pauciflora** Ridl., **FMP4** 222, **H44** 117, **S20** 95; herb about 15 cm tall; montane forest; known only from type; Telom, Ph; endemic.

233.70.1 **Hippeophyllum scortechinii** (Hook.*f.*) Schltr., **FMP4** 18, **H44** 225, **S20** 258; creeping epiphyte about 20 cm tall; lowland forest, often on riverside trees; Pk, Ph.

233.71.1 **Hylophila cheangii** Holttum, **H44** 120, **S20** 57; *Hylophila lanceolata* [*non* (Blume) Miq.] Ridl., **FMP4** 223; creeping herb to 25 cm tall; hill forest; Pk, Ph.

233.71.2 **Hylophila mollis** Lindl., **FMP4** 223, **H44** 119, **S20** 57; creeping herb to 60 cm tall; lowland and hill forests; widespread.

233.72.1 **Kingidium deliciosum** (Rchb.*f.*) H.R. Sweet, **S20** 657; *Kingiella decumbens* (Griff.) Rolfe, **FMP4** 158; *Phalaenopsis decumbens* (Griff.) Holttum, **H44** 669; 2–3-leaved epiphyte; widespread but not common.

233.73.1 **Kuhlhasseltia carrii** Holttum, **H44** 131, **S20** 81; herb about 18 cm tall; montane forest; known only from type; Fraser's Hill, Ph; endemic.

233.74.1 **Lecanorchis malaccensis** Ridl., **FMP4** 206 in part, **H44** 101, **S20** 134; leafless saprophyte to 35 cm tall; lowland forest; Ph, Jh, Sp.

233.74.2 **Lecanorchis multiflora** J.J.Sm., **H44** 101, **S20** 134; *Lecanorchis malaccensis* (*non* Ridl.) Ridl., **FMP4** 206 in part; leafless saprophyte to 60 cm tall; lowland forests; widespread.

233.74.3 **Lecanorchis sp.**, **S20** 134; one collection from the Cameron Highlands, Ph.

233.75.1 **Lepidogyne longifolia** (Blume) Blume, **FMP4** 224, **H44** 138, **S20** 68; creeping herb to 1 m tall; lowland forests including peat swamp; Ph, Jh.

233.76.1 **Liparis atrosanguinea** Ridl., **FMP4** 19, **H44** 202, **S20** 231; plant to about 50 cm tall; hill forest; Pk, ?Sl.

233.76.2 **Liparis bicolor** J.J.Sm., **H44** 208, **S20** 239; plant about 40 cm tall; presence still doubtful; ?Kl, ?Pk.

233.76.3 **Liparis bootanensis** Griff., **FMP5** 337, **H44** 205, **S20** 233; clumped epiphyte about 5 cm tall; only recorded from Gg Raya, P. Langkawi.

233.76.4 **Liparis cespitosa** (Lam.) Lindl., **H44** 205, **S20** 235; *Liparis cosmosa* Ridl., **FMP4** 23; clumped plant about 10 cm tall; on rocks and trees in the hills at 300–1500 m; widespread.

233.76.5 **Liparis compressa** (Blume) Lindl., **FMP4** 24, **H44** 209, **S20** 239; creeping plant; montane forest epiphyte (1300–1700 m) or lowlands epilith; widespread.

233.76.6 **Liparis elegans** Lindl., **FMP4** 23, **H44** 208, **S20** 236; creeping epiphyte or epilith; lowland and hills to 1000 m; widespread.

233.76.7 **Liparis ferruginea** Lindl., **FMP4** 20, **H44** 203, **S20** 233; herb to 50 cm tall; open damp grassy places; widespread in the lowlands.

233.76.8 **Liparis furcata** (Hook.*f*.) Ridl., **FMP4** 22, **H44** 202, **S20** 229; herb about 20 cm tall; montane forest; known only from Taiping Hills, Pk; endemic.

233.76.9 **Liparis gibbosa** Finet, **H44** 209, **S20** 240; *Liparis disticha* [*non* (Thouars) Lindl.] Ridl., **FMP4** 24; creeping epiphyte to about 20 cm tall; lowland to montane forest at 1500 m, including mangroves; widespread.

233.76.10 **Liparis hirundo** Holttum, **H44** 204, **S20** 233; pendulous epiphyte with swallow-like flowers; montane forest; known only from the Cameron Highlands, Ph; endemic.

233.76.11 **Liparis lacerata** Ridl., **FMP4** 22, **H44** 207, **S20** 237; lowland and hill forest; Pk, Ph, Jh.

233.76.12 **Liparis latifolia** (Blume) Lindl., **FMP4** 22, **H44** 207, **S20** 235; clumped epiphyte about 40 cm tall; montane forest; Taiping Hills, Pk.

233.76.13 **Liparis maingayi** (Hook.*f.*) Ridl., **FMP4** 21, **H44** 201, **S20** 229; one-leaved plant about 10 cm tall; on wet rocks in hill forest at 670–1300 m; Kd, Pn, Pk, Jh.

233.76.14 **Liparis parviflora** (Blume) Lindl., **FMP4** 23, **H44** 208, **S20** 239; epiphyte about 10 cm tall; on lowland and montane trees to 1300 m; widespread.

233.76.15 **Liparis parvula** (Hook.*f.*) Ridl., **FMP4** 22, **H44** 202, **S20** 229; one-leaved epilith to 10 cm tall; wet rocks in montane forest at 1300 m; Taiping Hills, Pk; endemic.

233.76.16 **Liparis purpureoviridis** Burkill *ex* Ridl., **FMP4** 21, **H44** 201, **S20** 229; herb to 30 cm tall; montane forest; Fraser's Hill and Gg Tahan, Ph.

233.76.17 **Liparis rheedei** (Blume) Lindl., **H44** 203, **S20** 232; *Liparis transtillata* Ridl., **FMP4** 21; about 50 cm tall; montane forest about 1300 m; widespread.

233.76.18 **Liparis rhombea** J.J.Sm., **H44** 207, **S20** 236; epiphyte about 15 cm tall; lowland forest; once from Tembeling, Ph.

233.76.19 **Liparis tricallosa** Rchb.*f.*, **FMP4** 20, **H44** 202, **S20** 231; to about 50 cm tall; lowlands to 670 m; widespread.

233.76.20 **Liparis viridicallus** Holttum, **H44** 208, **S20** 236; creeping plant; montane forest; Fraser's Hill and Gg Ulu Kali, Ph; endemic.

233.76.21 **Liparis viridiflora** (Blume) Lindl., **H44** 205, **S20** 235; *Liparis longipes* Lindl., **FMP4** 23; epiphyte; lowlands and mountains; Pn, Pk, Ph.

233.76.22 **Liparis wrayi** Hook.*f.*, **FMP4** 21, **H44** 203, **S20** 231; plant about 25 cm tall; lowland freshwater swamp forest; Pk, P. Tioman, Jh, Sp.

233.77.1 **Ludisia discolor** (Ker Gawl.) A. Rich., **S20** 63; *Haemaria discolor* (Ker Gawl.) Lindl., **FMP4** 216, **H44** 124; purple-leaved creeping herb to 20 cm tall; on rocks in the lowlands and hills; Kd, Pn, Pk, Ph, Jh.

233.78.1 **Luisia antennifera** Blume, **FMP4** 153, **H44** 696, **S20** 687; epiphyte to 60 cm tall; on riverside trees; Pk, Ph, Sl, NS.

233.78.2 **Luisia curtisii** Seidenf., **S20** 687; *Luisia tristis sensu* Hook.*f.*, **FMP4** 153; *Luisia jonesii* (*non* J.J.Sm.) Holttum, **H44** 695; epiphyte; lowland forest; Pn, Pk, NS.

233.78.3 **Luisia jonesii** J.J.Sm., **S20** 687; epiphyte; Kd; endemic.

233.78.4 **Luisia zollingeri** Rchb.*f.*, **H44** 697, **S20** 689; *Luisia brachystachys* [*non* (Lindl.) Blume] Ridl., **FMP4** 153; epiphyte; Ps, P. Langkawi.

233.79.1 **Macodes petola** (Blume) Lindl., **FMP4** 215, **H44** 117, **S20** 98; herb about 30 cm tall; damp lowland and hill forest; Pn southward.

233.80.1 **Macropodanthus alatus** (Holttum) Seidenf. & Garay, **S20** 683; *Sarcochilus alatus* Holttum, **H44** 684; epiphyte; montane forest; once on Fraser's Hill, Ph, at 1350 m.

233.80.2 **Macropodanthus tridentatus** Seidenf., **S20** 683; *Sarcochilus berkeleyi* [*non* (Rchb.*f.*) Rchb.*f.*] Holttum, **H44** 684; epiphyte; known only from type, Gg Panti, Jh; endemic.

233.81.1 **Malaxis acutangula** (Hook.*f.*) Kuntze, **H44** 198, **S20** 225; *Microstylis acutangula* Hook.*f.*, **FMP4** 11; plant about 20 cm tall; on rocks and trees in hill forest; Kl, Pk.

233.81.2 **Malaxis calophylla** (Rchb.*f.*) Kuntze, **H44** 197, **S20** 223; *Microstylis calophylla* Rchb.*f.*, **FMP4** 11; bronze-leaved herb to 25 cm tall; hill forest, often on limestone; Kd, Kl, Pn, Jh.

233.81.3 **Malaxis carrii** Seidenf. & J.J. Wood, **S20** 221; herb; known only from type, Gg Senyum, Ph; endemic.

233.81.4 **Malaxis chamaeorchis** (Schltr.) Seidenf., **S20** 220; herb about 10 cm tall; montane forest; once from Gg Panti, Jh.

233.81.5 **Malaxis langkawiensis** Seidenf. & J.J. Wood, **S20** 221; *Microstylis macrochila* Rolfe var. *minor* Ridl., **FMP4** 11; *Malax macrochila* (Rolfe) Holttum var. *minor* (Ridl.) Holttum, **H44** 195; herb about 10 cm tall; known only from type; Kuala Kuah, P. Langkawi; endemic.

233.81.6 **Malaxis latifolia** Sm., **H44** 195, **S20** 219; *Microstylis congesta* Rchb.*f*, **FMP4** 12; herb to 40 cm tall; lowland forests; widespread.

233.81.7 **Malaxis macrochila** (Rolfe) Holttum, **S20** 226; herb; locality uncertain.

233.81.8 **Malaxis micrantha** (Hook.*f.*) Kuntze, **H44** 197, **S20** 225; *Microstylis flavoviridis* Ridl., **FMP4** 12; *Microstylis micrantha* Hook.*f*, **FMP4** 12; creeping herb; lowland and hill forest, sometimes on rocks; widespread.

233.81.9 **Malaxis nemoralis** (Ridl.) Holttum, **H44** 198, **S20** 226; *Microstylis nemoralis* Ridl., **FMP4** 13; creeping herb to 20 cm tall; lowland swamp forest; Pk, Sl, Ml, Jh; endemic.

233.81.10 **Malaxis perakensis** (Ridl.) Holttum, **H44** 198, **S20** 223; *Microstylis perakensis* Ridl., **FMP4** 11; creeping herb; lowland forest; Pk, Ph, NS.

233.81.11 **Malaxis prasina** (Ridl.) Seidenf. & Smitinand, **S20** 221; *Malaxis reniloba* (Carr) Holttum, **H44** 195; herb to 20 cm tall; limestone hills; Ps.

233.81.12 **Malaxis stenophylla** Holttum, **H44** 195, **S20** 223; plant about 10 cm tall; known only from type; Gg Padang, Tg, at 1300 m; endemic.

233.82.1 **Malleola dentifera** J.J.Sm., **H44** 712, **S20** 703; epiphyte to 25 cm long; lowland forest; Kl, Ph.

233.82.2 **Malleola insectifera** (J.J.Sm.) J.J.Sm. & Schltr., **H44** 712, **S20** 703; epiphyte to 20 cm long; lowland forest; Kl, ?Ph.

233.82.3 **Malleola macranthera** (Ridl.) Holttum, **H44** 709, **S20** 699; *Malleola altocarinata* Holttum, **H44** 709; short-stemmed epiphyte; hill forest; Sl.

233.82.4 **Malleola penangiana** (Hook.*f.*) J.J.Sm. & Schltr., **H44** 710, **S20** 701; *Saccolabium penangianum* Hook.*f.*, **FMP4** 172; pendulous epiphyte to 20 cm long; lowland forest; Kl, Pk, Ph.

233.82.5 **Malleola sylvestris** (Ridl.) Garay, **S20** 703; *Saccolabium sylvestre* Ridl., **FMP4** 168; *Saccolabium undulatum* (*non* Lindl.) Ridl., **FMP4** 173; *Malleola undulata* (Ridl.) J.J.Sm. & Schltr., **H44** 711; epiphyte; lowland forest, including that on limestone; Kl, Pk.

233.82.6 **Malleola witteana** (Rchb.*f.*) J.J.Sm. & Schltr., **H44** 710, **S20** 701; pendulous epiphyte to 30 cm long; montane forest; once at the Cameron Highlands, Ph.

233.83.1 **Mastigion putidum** (Teijsm. & Binn.) Garay & al., **G06** 637, **S19** 50; *Bulbophyllum fascinator* Rolfe, **FMP4** 74, **H44** 407; *Bulbophyllum putidum* (Teijsm. & Binn.) J.J.Sm., **S20** 439; epiphyte; ?Kd, Malayan occurrence in some doubt.

233.84.1 **Micropera fuscolutea** (Lindl.) Garay, **S20** 615; *Saccolabium adnatum* (Ridl.) Ridl., **FMP4** 174; *Camarotis adnata* (Ridl.) Holttum, **H44** 631; climbing to 40 cm long; lowland forest; Tg, Ph, Jh, Sp.

233.84.2 **Micropera pallida** (Roxb.) Lindl., **S20** 617; *Saccolabium saxicola* Ridl., **FMP4** 172; *Camarotis apiculata* Rchb.*f.*, **H44** 633; slender-stemmed plant on rocks and trees; widespread, commoner in the north.

233.84.3 **Micropera proboscidea** (J.J.Sm.) Garay, **S20** 615; *Camarotis proboscidea* (J.J.Sm.) J.J.Sm., **H44** 631; long climbing plant; lowland forest; Sl.

233.85.1 **Microsaccus ampullaceus** J.J.Sm., **H44** 594, **S20** 582; epiphyte to 15 cm long; widespread.

233.85.2 **Microsaccus javensis** Blume, **FMP4** 175, **H44** 595, **S20** 582; epiphyte to 15 cm long; on lowland trees including mangroves; Ph southward.

233.85.3 **Microsaccus griffithii** (C.S.P. Parish & Rchb.*f.*) Seidenf., **S20** 581; *Microsaccus brevifolius* J.J.Sm., **H44** 594; epiphyte to 10 cm long; on mangrove and riverside trees, also on limestone; Kl, Ph, Sl, Jh, Sp.

233.85.4 **Microsaccus sumatranus** J.J.Sm., **H44** 594, **S20** 581; epiphyte to 12 cm long; montane forest; Pk, Ph.

233.85.5 **Microsaccus truncatus** Carr, **H44** 594, **S20** 582; epiphyte about 12 cm long; montane forest; Fraser's Hill and Gg Ulu Kali, Ph; endemic.

233.86.1 **Mischobulbum crassum** H.Turner, **S20** 152; herb about 20 cm tall; hill forest; 450 m; known only from type; Ulu Gombak, Sl; endemic.

233.86.2 **Mischobulbum wrayanum** (Hook.*f.*) Rolfe, **FMP4** 115, **S20** 151; *Tainia wrayana* (Hook.*f.*) J.J.Sm., **H44** 183; herb to 20 cm tall; montane forest; Kd, Pn, Pk.

233.87.1 **Nephelaphyllum pulchrum** Blume, **FMP4** 115, **H44** 178, **S20** 150; *Nephelaphyllum latilabre* Ridl., **H44** 178; purplish creeping herb to 15 cm tall; lowland and hill forests; widespread.

233.87.2 **Nephelaphyllum tenuiflorum** Blume, **FMP4** 115, **H44** 178, **S20** 151; slender creeping herb; montane forest; uncommon.

233.88.1 **Nervilia aragoana** Gaudich., **H44** 106, **S20** 137; *Aplostellis flabelliformis* (Lindl.) Ridl., **FMP4** 203; tuberous herb to 30 cm tall; grassy places; Kd, Pk, Ph.

233.88.2 **Nervilia calcicola** Kerr, **S20** 135; *Aplostellis punctata* Ridl., **FMP4** 204 in part; *Nervilia punctata auct. non* (Blume) Makino, **H44** 106 in part; tuberous hexagonally-leaved herb to 15 cm tall; P. Langkawi.

233.88.3 **Nervilia plicata** (Andr.) Schltr., **S20** 137; *Aplostellis velutina* (C.S.P. Parish & Rchb.*f.*) Ridl., **FMP4** 204; *Nervilia discolor* (Blume) Schltr., **H44** 106; brownish herb to 10 cm tall; P. Langkawi, Pn.

233.88.4 **Nervilia punctata** (Blume) Makino, **H44** 106 in part, **S20** 135; *Aplostellis punctata* (Blume) Ridl., **FMP4** 204 in part; herb to 10 cm tall; lowland forest; Pn, Pk, Jh, Sp.

233.89.1 **Neuwiedia griffithii** Rchb.*f.*, **FMP4** 296, **H44** 63, **S20** 34; creeping herb about 30 cm tall; damp lowland forest; Ph, Sl, NS, Ml, Jh, Sp.

233.89.2 **Neuwiedia veratrifolia** Blume, **H44** 64, **S20** 32; *Neuwiedia lindleyi* Rolfe, **FMP4** 295; herb to over 1 m tall; lowland forest; Pn southward.

233.89.3 **Neuwiedia zollingeri** Rchb.f. var. **singapureana** (Baker) de Vogel, **S20** 34; *Neuwiedia curstisii* Rolfe, **FMP4** 297; *Neuwiedia ocrea* Ridl., **FMP4** 296; *Neuwiedia singapureana* (Baker) Rolfe, **H44** 64; stout-rooted herb to 30 cm tall; lowland and hill forest to 600 m; widespread.

233.90.1 **Oberonia anthropophora** Lindl., **H44** 221, **S20** 254; *Oberonia aurantiaca* Ridl., **FMP4** 15; nodding epiphyte to 10 cm long; lowlands; Sl, Jh.

233.90.2 **Oberonia bertoldii** King & Pantl., **S20** 251, **H44** 225, **FMP4** 17; *Oberonia gracillima* Ridl., **FMP4** 14; tiny epiphyte; lowland forest; Pk, Ph, Sl, Jh, Sp; endemic.

233.90.3 **Oberonia boerlageana** J.J.Sm., **S20** 243; *Oberonia flava* Ridl., **FMP4** 17, **H44** 214; small epiphyte to 12 cm tall; lowland forest; Tenom, Ph.

233.90.4 **Oberonia brachystachys** Lindl., **S20** 257; *Oberonia demissa* Lindl., **H44** 224; tiny epiphyte hardly 5 cm tall; lowlands; ?Ml, Jh.

233.90.5 **Oberonia ciliolata** Hook.*f.*, **FMP4** 16, **H44** 220, **S20** 247; epiphyte to 20 cm tall; lowlands, including mangroves and limestone, and mountains; widespread.

233.90.6 **Oberonia dissitiflora** Ridl., **H44** 218, **S20** 245; *Oberonia lunata auct. non* (Blume) Lindl., **FMP4** 14 in part; epiphyte to 30 cm long; lowlands; Ph southward.

233.90.7 **Oberonia falcata** King & Pantl., **S20** 250; *Oberonia caudata* King & Pantl., **FMP4** 18, **H44** 219; *Oberonia pendula* Ridl., **FMP4** 18, **H44** 219; slender pendulous epiphyte to 30 cm long; montane forest; Pk, Ph.

233.90.8 **Oberonia falconeri** Hook.*f.*, **S20** 245; *Oberonia calcicola* Holttum, **H44** 217; epiphyte to 10 cm tall; once from P. Langkawi.

233.90.9 **Oberonia flabellifera** Holttum, **H44** 222, **S20** 253; epiphyte to 10 cm long; riverside trees; Mawai, Jh and ?Sp; endemic.

233.90.10 **Oberonia fungumolens** Burkill, **FMP5** 337, **H44** 221, **S20** 249; mushroomy-smelling pendulous epiphyte to 30 cm long; lowlands; once near Tanjong Malim, Pk.

233.90.11 **Oberonia gracilis** Hook.*f.*, **FMP4** 17, **H44** 219, **S20** 247; epiphyte to 30 cm long; lowlands and mountains; Sg Kinta, Pk, and Cameron Highlands, Ph; endemic.

233.90.12 **Oberonia grandis** Ridl., **FMP4** 16, **H44** 218, **S20** 247; epiphyte about 30 cm long; hills and moutains; Main Range; endemic.

233.90.13 **Oberonia insectifera** Hook.*f.*, **FMP4** 15, **H44** 221, **S20** 253; epiphyte barely 10 cm tall; lowland forest; Pk, Ph.

233.90.14 **Oberonia intermedia** King & Pantl., **FMP4** 17, **H44** 225, **S20** 251; epiphyte about 15 cm long; known only from type; Pk; endemic.

233.90.15 **Oberonia iridifolia** (Roxb.) Lindl., **FMP4** 14, **H44** 218, **S20** 243; epiphyte to 25 cm long; lowlands and moutains; P. Hujong Duri (Langkawi) and Cameron Highlands, Ph.

233.90.16 **Oberonia lunata** (Blume) Lindl., **FMP4** 14 in part, **H44** 223, **S20** 256; *Oberonia subnavicularis* King & Pantl., **FMP4** 14; *Oberonia porphyrochila* Ridl., **FMP4** 16; epiphyte to about 15 cm tall; lowlands and mountains; Pn, Pk, Ph, Jh, Sp.

233.90.17 **Oberonia lycopodioides** (K.D. Koenig) Ormerod, **S19** 21; *Oberonia anceps* Lindl., **FMP4** 15, **H44** 219, **S20** 247; epiphyte 10–30 cm long; lowlands; widespread, common.

233.90.18 **Oberonia marina** J.B. Comber, **S20** 254; *Oberonia rhizophoreti* (*non* Schltr.) J.J.Sm., **H44** 223; tiny epiphyte barely 5 cm tall; on riverside trees; only known from Mawai, Jh.

233.90.19 **Oberonia miniata** Lindl., **FMP4** 16, **H44** 220, **S20** 249; *Oberonia rolfeana* King & Pantl., **FMP4** 18; epiphyte to 50 cm long; lowlands; widespread.

233.90.20 **Oberonia prainiana** King & Pantl., **FMP4** 14, **H44** 222, **S20** 255; *Oberonia brunnescens* Ridl., **FMP4** 17; tiny epiphyte to 10 cm tall; lowlands; Pk, NS, Jh.

233.90.21 **Oberonia pumilio** Rchb.*f.*, **H44** 224, **S20** 257; tufted epiphyte to 10 cm tall; lowlands and mountains; Pn, Pk, Ph, Jh.

233.90.22 **Oberonia rosea** Hook.*f.*, **FMP4** 15, **H44** 224, **S20** 251; epiphyte about 6 cm long; montane forest; once each from Gg Batu Puteh and Taiping Hills, Pk.

233.90.23 **Oberonia rufilabris** Lindl., **S20** 253; *Oberonia tiomanensis* M.R. Hend., **H44** 222; epiphyte about 10 cm long; hill forest; Kd, P. Tioman.

233.90.24 **Oberonia semifimbriata** J.J.Sm., **H44** 223, **S20** 254; epiphyte about 10 cm tall; lowland forest; once at Tembeling, Ph.

233.90.25 **Oberonia sinuosa** Ridl., **FMP4** 15, **H44** 219, **S20** 248; epiphyte to 25 cm long; poorly known and somewhat doubtful species; Sl, NS.

233.90.26 **Oberonia spiralis** Lindl., **S19** 21; *Oberonia spathulata* Lindl., *nom. illeg.*, **FMP4** 17, **H44** 220; *Oberonia padangensis* Schltr., **S20** 249; epiphyte to 35 cm long; montane forest; ?Kl, Ph.

233.90.27 **Oberonia stenophylla** Ridl., **FMP4** 15, **H44** 222, **S20** 254; epiphyte about 10 cm tall; lowland forest; Tg, Pk, Ph, Jh, Sp.

233.90.28 **Oberonia suborbicularis** Carr, **H44** 225, **S20** 257; tiny epiphyte about 5 cm tall; lowland and montane forest; Tembeling and Cameron Highlands, Ph; endemic.

233.90.29 **Oberonia transversiloba** Holttum, **H44** 214, **S20** 245; epiphyte to 20 cm tall; forest on limestone; once at Gua Berong, Kl, and once at Gua Tipus, Ph; endemic.

233.91.1 **Octarrhena condensata** (Ridl.) Holttum, **H44** 548, **S20** 337; *Oberonia condensata* Ridl., **FMP4** 18; flat-stemmed epiphyte to 20 cm long; montane forest; Ph, Sl.

233.91.2 **Octarrhena parvula** Thwaites, **H44** 548, **S20** 337; *Phreatia nana* Hook.*f*., **FMP4** 106; epiphyte to 10 cm tall; montane forest; several localities.

233.92.1 **Oeceoclades pulchra** (Thouars) P.J. Cribb & M.A. Clem., **W32** 114; *Eulophia macrostachya* Lindl., **FMP5** 338, **H44** 537; *Eulophia pulchra* (Thouars) Lindl., **S20** 541; herb to 75 cm tall; lowland forest; Pk, Sl.

233.93.1 **Orchipedum plantaginifolium** Breda. **S20** 79; *Queteletia plantaginifolia* (Breda) Blume, **H44** 130; herb to 50 cm tall; montane forest; once each from Gg Lang, Kd, and Gg Korbu, Pk.

233.94.1 **Ornithochilus difformis** (Wall. *ex* Lindl.) Schltr., **S20** 588; epiphyte about 10 cm tall; montane forest; once at 1800 m on Gg Ulu Kali, Ph.

233.95.1 **Pachystoma pubescens** Blume, **S20** 159; *Pachystoma senile* (Lindl.) Rchb.*f*, **FMP4** 116 '*sessile*', **H44** 147; herb to 60 cm tall; open grassy places; north of Peninsula.

233.96.1 **Paphiopedilum barbatum** (Lindl.) Pfitzer, **FMP4** 231, **H44** 77, **S20** 40; herb; open grassy or rocky places on mountains; widespread.

233.96.2 **Paphiopedilum bullenianum** (Rchb.*f*.) Pfitzer, **H44** 77, **S20** 40; *Paphiopedilum robinsonii* (Ridl.) Ridl., **FMP4** 232; herb to 60 cm tall; mossy places in montane forest; Gg Tahan, Ph, P. Tioman and Gg Panti, Jh.

233.96.3 **Paphiopedilum callosum** (Rchb.f.) Stein var. **sublaeve** (Rchb.*f*.) P.J. Cribb, **H44** 78, **S20** 42; herb; montane forest; known only from Gg Jerai, Kd.

233.96.4 **Paphiopedilum lowii** (Lindl.) Stein, **FMP4** 232, **H44** 73, **S20** 39; epiphyte, occasionally on rocks; lower montane forest at 1000–1300 m; Main Range.

233.96.5 **Paphiopedilum niveum** (Rchb.*f*.) Stein, **FMP4** 231, **H44** 69, **S20** 39; herb; on limestone rocks; P. Langkawi, Ps, Kd, Kl.

233.97.1 **Papilionanthe hookeriana** (Rchb.*f*.) Schltr., **S20** 663; *Vanda hookeriana* Rchb.*f*., **FMP4** 158, **H44** 716; long-climbing epiphyte; open swampy places; Tg, Pk, Jh.

233.98.1 **Pecteilis susannae** (L.) Raf., **S20** 108; *Habenaria susannae* (L.) R.Br., **FMP4** 228, **H44** 82; tuberous herb to 120 cm tall; open grassy places; Kd.

233.99.1 **Pelatantheria cristata** (Ridl.) Ridl., **FMP4** 177, **H44** 649, **S20** 614; climbing epiphyte to 30 cm long; lowland trees; Kd, Kl, Pk, Ph, NS.

233.100.1 **Pennilabium acuminatum** (Ridl.) Holttum, **H44** 706, **S20** 704; *Sarcochilus acuminatus* Ridl., **FMP4** 178; epiphyte to 10 cm tall; montane forest; Cameron Highlands, Ph; endemic.

233.100.2 **Pennilabium angraecum** (Ridl.) J.J.Sm., **H44** 706, **S20** 706; *Saccolabium angraecum* Ridl., **FMP4** 173; small epiphyte a few cm tall; Kl, Ph, Sl; endemic.

233.100.3 **Pennilabium struthio** Carr, **H44** 706, **S20** 706; small epiphyte; lowlands and mountains; Kl, Ph.

233.101.1 **Peristylus candidus** J.J.Sm., **S20** 107; *Habenaria lacertifera auct. non* (Lindl.) Benth., **FMP4** 230 in part; *Habenaria sumatrana* (Schltr.) Schltr., **H44** 88; herb to 50 cm tall; open grassy places; widespread, commoner in the south.

233.101.2 **Peristylus goodyeroides** (D. Don) Lindl., **S20** 103; *Habenaria glaucescens* Ridl., **FMP4** 229; *Habenaria goodyeroides* D. Don, **H44** 87; herb to 60 cm tall; P. Langkawi.

233.101.3 **Peristylus gracilis** Blume, **S20** 103; *Habenaria inconspicua* Ridl., **FMP4** 229; *Habenaria bambusetorum* Kraenzl., **H44** 85; herb to 50 cm tall; damp montane forest; once at Telom, Ph.

233.101.4 **Peristylus grandis** Blume, **S20** 103; *Habenaria gigas* Hook.*f.*, **FMP4** 229, **H44** 87; herb to 150 cm tall; montane forest; Pk, Ph, Sl.

233.101.5 **Peristylus holttumii** Seidenf., **S20** 107; *Habenaria lacertifera auct. non* (Lindl.) Benth., **FMP4** 230 in part; *Habenaria sumatrana* (Schltr.) Schltr. var. *major* Holttum, **H44** 89; herb to 50 cm tall; open places in the lowlands; Kd.

233.101.6 **Peristylus lacertiferus** (Lindl) J.J.Sm, **S20** 107; *Habenaria lacertifera* (Lindl.) Benth., **FMP4** 230 in part, **H44** 88; herb 20–40 cm tall; open places; widespread.

233.101.7 **Peristylus monticola** (Ridl.) Seidenf., **S20** 103; *Habenaria monticola* Ridl., **FMP4** 230, **H44** 87; herb to 60 cm tall; open places at 700–1200 m; Gg Jerai, Kd, and Gg Ledang, Jh.

233.102.1 **Phaius callosus** (Blume) Lindl., **FMP4** 124, **H44** 174, **S20** 177; herb to 1 m tall; montane forest at 1200–1500 m; several localities.

233.102.2 **Phaius flavus** (Blume) Lindl., **H44** 174, **S20** 177; herb to 90 cm tall; montane forest; Cameron Highlands and Gg Ulu Kali, Ph.

233.102.3 **Phaius pauciflorus** (Blume) Blume var. **pallidus** (Ridl.) Holttum, **H44** 175, **S20** 177; *Limatodes pallidus* (Ridl.) Ridl., **FMP4** 124; herb to 1 m tall; montane forest at 600–1200 m; Taiping Hills and Main Range; endemic variety.

233.102.4 **Phaius tankervilleae** (Banks *ex* l'Her.) Blume, **H44** 172, **S20** 176; *Phaius wallichii* Lindl., **FMP4** 123; herb to 1.4 m tall; lowland and hill forest to 1200 m; widespread but uncommon.

233.103.1 **Phalaenopsis appendiculata** Carr, **H44** 668, **S20** 671; small epiphyte; lowlands; only known from Tembeling, Ph; endemic.

233.103.2 **Phalaenopsis cochlearis** Holttum, **S20** 669; epiphyte; once from Kuala Kelawi, NS.

233.103.3 **Phalaenopsis cornucervi** (Breda) Blume & Rchb.*f.*, **FMP4** 156, **H44** 667, **S20** 668; epiphyte to 25 cm tall; lowlands and mountains; Kd, Pk, Ph, Sl, NS.

233.103.4 **Phalaenopsis fuscata** Rchb.*f.*; ?**FMP4** 157, **H44** 669 in part, **S20** 668; epiphyte; Kota Gelanggi and Tembeling, Ph.

233.103.5 **Phalaenopsis kunstleri** Hook.*f.*, **S20** 669; *Phalaenopsis fuscata auct. non* Rchb.*f.*, **FMP4** 157, **H44** 669 in part; epiphyte; Pk, Jh.

233.103.6 **Phalaenopsis maculata** Rchb.*f.*, **S20** 671; *Phalaenopsis muscicola* Ridl., **FMP4** 156; *Phalaenopsis sumatrana auct. non* (Korth.) Rchb.*f.*, **H44** 670 in part; epiphyte; on wet mossy trees; Sg Tahan, Ph.

233.103.7 **Phalaenopsis sumatrana** Korth. & Rchb.*f.*, **FMP4** 156, **H44** 670 in part, **S20** 671; epiphyte; lowlands and hills; Pk, Sl, Ml, Jh.

233.103.8a **Phalaenopsis violacea** Witte var. **murtoniana** Rchb.*f.*, **FMP4** 156, **S20** 668; short-stemmed epiphyte; Pk; endemic variety.

233.103.8b **Phalaenopsis violacea** Witte var. **violacea**, **FMP4** 156, **H44** 667, **S20** 668; short-stemmed epiphyte; on lowland riverside trees; Pk, Sl, Ml.

233.104.1 **Pholidota articulata** Lindl., **H44** 236, **S20** 192; *Pholidota decurva* Ridl., **FMP4** 139; pendulous epiphyte about 50 cm long; hill forest; Pk, Sl.

233.104.2a **Pholidota carnea** (Blume) Lindl. var. **carnea**, **H44** 238, **S20** 197; *Crinonia carnea* Blume, **FMP4** 137; *Crinonia elizabethiana* (Ridl.) Ridl., **FMP4** 137; *Pholidota globosa* [*non* (Blume) Lindl.] Ridl., **H44** 238; exposed mountain ridges; Pk, Ph.

233.104.2b **Pholidota carnea** (Blume) Lindl. var. **parviflora** (Hook.*f.*) de Vogel, **S20** 197; *Crinonia parviflora* (Hook.*f.*) Pfitzer, **FMP4** 137; *Pholidota parviflora* Hook.*f.*, **H44** 238; common on high mountains; Ph, Sl; endemic variety.

233.104.2c **Pholidota carnea** (Blume) Lindl. var. **pumila** (Ridl.) de Vogel, **S20** 197; *Crinonia parviflora* var. *pumila* (Ridl.) Ridl., **FMP4** 137; high mountains; Kd, Pk, Ph; endemic variety.

233.104.3 **Pholidota gibbosa** (Blume) de Vriese, **H44** 237, **S20** 195; *Chelonanthera gibbosa* Blume, **FMP4** 139; long-creeping; montane forest; Ph, Sl.

233.104.4 **Pholidota imbricata** Hook., **FMP4** 139, **S20** 192; *Pholidota pallida* (*non* Lindl.) Holttum, **H44** 237; on trees or rocks; common on limestone; widespread.

233.104.5 **Pholidota longibulba** Holttum, **H44** 237, **S20** 195; creeping epiphyte about 30 cm tall; Cameron Highlands, Ph, and Liam, Sl; endemic.

233.104.6 **Pholidota ventricosa** (Blume) Rchb.*f.*, **H44** 238, **S20** 195; *Pholidota grandis* Ridl., **FMP4** 140; epiphyte to 50 cm tall; hill forest; Pk, Sl.

233.105.1 **Phreatia crassifolia** Ridl., **FMP4** 106, **H44** 554, **S20** 346; tiny epiphyte a few cm tall; montane forest; Ph; endemic.

233.105.2 **Phreatia densiflora** (Blume) Lindl., **FMP4** 105, **H44** 553, **S20** 344; epiphyte; montane forest; Pk, Ph.

233.105.3 **Phreatia laxiflora** (Blume) Lindl., **H44** 553, **S20** 344; epiphyte about 20 cm tall; montane forest; Ph, Sl.

233.105.4 **Phreatia linearis** Ridl., **FMP4** 106, **H44** 553, **S20** 344; epiphyte to 30 cm tall; Gg Tahan, Ph, and Ulu Langat, Sl; endemic.

233.105.5 **Phreatia listrophora** Ridl., **FMP4** 106, **H44** 552, **S20** 344; creeping epiphyte to 20 cm tall; montane forest; Pk, Ph, ?Sl.

233.105.6 **Phreatia plantaginifolia** (K.D. Koenig) Ormerod, **S19** 22; *Phreatia minutiflora* Lindl., **FMP4** 105; *Phreatia microtidis* Lindl., **FMP4** 106; *Phreatia secunda* (Blume) Lindl., **H44** 553, **S20** 346; small epiphyte to 10 cm long; lowland swamps and forest on limestone; widespread.

233.105.7 **Phreatia pusilla** (Blume) Lindl., **H44** 553, **S20** 344; epiphyte to 15 cm tall; montane forest; Ph.

233.105.8 **Phreatia sulcata** (Blume) J.J.Sm., **H44** 552, **S20** 342; epiphyte about 20 cm long; hill forest at 600–1200 m; widespread.

233.106.1 **Pilophyllum villosum** (Blume) Schltr., **W32** 123; *Chrysoglossum villosum* Blume, **FMP4** 111, **H44** 178, **S20** 531; large-leaved creeping herb to 70 cm tall; montane forest; Pk, Ph, Sl .

233.107.1 **Platanthera angustata** (Blume) Lindl., **S20** 99; *Habenaria zosterostyloides* Hook.*f.*, **FMP4** 226; *Habenaria angustata* (Blume) Kuntze, **H44** 82; herb to 120 cm tall; montane forest at 1700–2300 m; many localities.

233.108.1 **Plocoglottis gigantea** (Hook.) J.J.Sm., **H44** 160, **S20** 183; *Plocoglottis foetida* Ridl., **FMP4** 144; herb to 100 cm tall; damp lowland forest; widespread.

233.108.2 **Plocoglottis javanica** Blume, **FMP4** 143, **H44** 159, **S20** 181; *Plocoglottis acuminata auct. non* Blume, **FMP4** 143, **H44** 160; herb to 100 cm tall; wet places in lowland and montane forest; widespread.

233.108.3 **Plocoglottis lowii** Rchb.*f.*, **H44** 160, **S20** 181; *Plocoglottis porphyrophylla* Ridl., **FMP4** 144; herb to 100 cm or more tall; damp lowland forest, commoner near the sea; Ph southward.

233.108.4 **Plocoglottis quadrifolia** J.J.Sm., **S20** 181; herb 60–90 cm tall; one collection from Pn.

233.109.1 **Poaephyllum pauciflorum** (Hook.*f.*) Ridl., **FMP4** 108, **H44** 511, **S20** 335; narrow-leaved epiphyte to 50 cm long; lowland forest; Pk, Ph, Jh.

233.110.1 **Podochilus lucescens** Blume, **FMP4** 193, **H44** 502, **S20** 335; slender tufted epiphyte to 20 cm long; Ps, P. Langkawi, Jh.

233.110.2 **Podochilus microphyllus** Lindl., **FMP4** 193, **H44** 500, **S20** 333; slender tufted epiphyte to 20 cm long; lowland and hill forest to 1000 m; widespread and common.

233.110.3 **Podochilus muricatus** (Teijsm. & Binn.) Schltr., **H44** 501, **S20** 335; *Appendicula muricata* Teijsm. & Binn., **FMP4** 197; tufted plant to 15 cm long; on rocks and trees in the mountains to 1300 m; widespread.

233.110.4 **Podochilus tenuis** (Blume) Lindl., **FMP4** 193, **H44** 500, **S20** 333; tufted moss-like plant; on wet rocks and tree trunks in lowland and hill forest to 700 m; widespread and not uncommon.

233.111.1 **Polystachya concreta** (Jacq.) Garay & H.R. Sweet, **S20** 566; *Polystachya penangensis* Ridl., **FMP4** 152; *Polystachya siamensis* Ridl., **FMP4** 152; *Polystachya singapurensis* Ridl., **FMP4** 152; *Polystachya flavescens* (Blume) J.J.Sm., **H44** 546; epiphyte to 10 cm tall; lowlands and hills; widespread.

233.112.1 **Pomatocalpa andamanica** (Hook.*f.*) J.J.Sm., **S20** 611; *Saccolabium latifolium* (Lindl.) Schltr. var. *strictum* Ridl., **FMP4** 166; *Pomatocalpa naevatum auct. non* J.J.Sm., **H44** 630; elongate epiphyte; one poor specimen from Batu Caves, Sl.

233.112.2 **Pomatocalpa arachnanthe** (Ridl.) J.J.Sm., **H44** 629, **S20** 611; *Saccolabium arachnanthe* Ridl., **FMP4** 174; long-climbing epiphyte; lowlands; Kd, Pk, Ph; endemic.

233.112.3 **Pomatocalpa fusca** (Lindl.) J.J.Sm., **S20** 611; *Pomatocalpa elongata* Carr, **H44** 630; epiphyte to 120 cm long; on exposed lowland trees; Ph, Ml, Jh.

233.112.4 **Pomatocalpa kunstleri** (Hook.*f.*) J.J.Sm., **H44** 627, **S20** 608; *Saccolabium pubescens* Ridl., **FMP4** 174; epiphyte to 30 cm tall; lowlands; Kd, Kl, Pk, Ph.

233.112.5 **Pomatocalpa latifolia** (Lindl.) J.J.Sm., **H44** 628, **S20** 613; *Saccolabium latifolium* (Lindl.) Schltr., **FMP4** 166 incl. var. *parviflorum* Ridl.; *Saccolabium hortense* Ridl., **FMP4** 167; epiphyte, sometimes long-stemmed; lowlands; widespread.

233.112.6 **Pomatocalpa parva** (Ridl.) J.J.Sm., **H44** 627, **S20** 613; *Saccolabium parvum* (Ridl.) Ridl., **FMP4** 167; epiphyte; on limestone; known only from type, Kota Gelanggi, Ph; endemic.

233.112.7 **Pomatocalpa spicata** Breda, **H44** 628, **S20** 613; *Saccolabium hobsonii* Ridl., **FMP4** 167; *Saccolabium setulense* Ridl., **FMP4** 167; *Saccolabium uteriferum* (Hook.*f.*) Ridl., **FMP4** 168; *Pomatocalpa setulensis* (Ridl.) Holttum, **H44** 628; short-stemmed epiphyte to 40 cm across; lowland forest; Pk, Ph, NS.

233.113.1 **Porpax elwesii** (Rchb.*f.*) Rolfe, **S20** 308; *Porpax meirax auct. non* (Rchb.*f.*) King & Pantl., **FMP4** 104, **H44** 396; tiny plants barely 1 cm across; on lowland and montane rocks; P. Dayang Bunting (Langkawi), Gg Jerai, Kd, and Gg Tahan, Ph.

233.114.1 **Porphyroglottis maxwelliae** Ridl., **H44** 515, **S20** 534; large epiphyte to 120 cm long; restricted to SE Jh.

233.115.1 **Pristiglottis macrantha** (Hook.) J.J. Wood & Seidenf., **S20** 82; *Anoectochilus macranthus* (Hook.*f.*) Ridl., **FMP4** 214; *Cystopus macranthus* (Hook.*f.*) Holttum, **H44** 131; herb to 15 cm tall; hill forest; Taiping Hills. Pk, and Gg Belumut, Jh; endemic.

233.116.1 **Pteroceras biserratum** (Ridl.) Holttum, **H44** 687, **S20** 679; *Sarcochilus biserratus* Ridl., **FMP4** 180; epiphyte to 20 cm long; lowlands; Pk, Ph.

233.116.2 **Pteroceras cladostachyum** (Hook.*f.*) H.A. Peders., **S20** 676; *Sarcochilus cladostachys* Hook.*f.*, **FMP4** 179; *Sarcochilus tanyphyllus* Ridl., **FMP4** 179, **H44** 686; *Sarcochilus unguiculatus* (*non* Lindl.) Ridl., **FMP4** 178 in part; plant about 50 cm long; on trees and rocks; Kl, Pk, Ph.

233.116.3 **Pteroceras compressum** (Blume) Holttum, **S20** 679; pendulous epiphyte; montane forest; once from the Cameron Highlands, Ph.

233.116.4 **Pteroceras hirsutum** (Hook.f.) Holttum, **S20** 679; *Ascochilus hirsutus* (Hook.*f.*) Ridl., **FMP4** 182; *Sarcochilus hirsutus* Hook.*f.*, **H44** 691; epiphyte about 20 cm long; lowlands; Pk.

233.116.5 **Pteroceras johorense** (Holttum) Holttum, **S20** 680; *Sarcochilus johorensis* Holttum, **H44** 689; small epiphyte about 5 cm long; only known from near Sg Sedili in Jh; endemic.

233.116.6 **Pteroceras pallidum** (Blume) Holttum, **S20** 675; *Sarcochilus caligaris* Ridl., **FMP4** 178. **H44** 685; small epiphyte to 10 cm tall; Pk, Ph, NS, Jh, Sp.

233.116.7 **Pteroceras unguiculatum** (Lindl.) H.A. Peders., **S20** 676; *Sarcochilus unguiculatus* Lindl., **FMP4** 178 in part; *Sarcochilus pallidus auct. non* (Blume) Rchb.*f*., **H44** 686; epiphyte about 30 cm tall; Pk, Ph.

233.116.8 **Pteroceras violaceum** (Ridl.) Holttum, **S20** 680; *Sarcochilus violaceus* Ridl., **FMP4** 180, **H44** 687; poorly known montane forest epiphyte; type only collection; Gg Tahan, Ph; endemic.

233.117.1 **Renanthera angustifolia** Hook.*f*., **W32** 335; *Renanthera matutina* (Blume) Lindl., *nom. inval.*. **FMP4** 160, **H44** 636, **S20** 593; long climbing epiphyte, often hanging; exposed montane forest above 1350 m; Main Range.

233.117.2 **Renanthera elongata** (Blume) Lindl., **FMP4** 160, **H44** 634, **S20** 593; long climbing epiphyte; lowlands often near the sea; widespread.

233.118.1 **Renantherella histrionica** (Rchb.*f*.) Ridl., **FMP4** 161, **S20** 596; *Renanthera histrionica* Rchb.*f*., **H44** 634; epiphyte to 60 cm long, often hanging; on old mangroves or trees and rocks in the hills; quite widespread.

233.119.1 **Rhynchogyna luisifolia** (Ridl.) Seidenf. & Garay, **S20** 658; pendent epiphyte to 50 cm long; lowlands; ? P. Langkawi, Pk.

233.120.1 **Rhynchostylis gigantea** (Lindl.) Ridl., **FMP4** 163, **H44** 704, **S20** 661; large epiphyte to 50 cm tall; lowlands, but dubiously native; once from Seletar, Sp.

233.120.2 **Rhynchostylis retusa** (L.) Blume, **FMP4** 163, **H44** 703, **S20** 661; epiphyte to 40 cm long; lowlands; Ps, Kd, Kl, Tg.

233.121.1 **Rhytionanthos mirum** (J.J. Sm.) Garay & al., **S19** 52; *Bulbophyllum mirum* J.J.Sm., **S20** 451; epiphyte; once collected at Bertam, Kl.

233.122.1 **Robiquetia spatulata** (Blume) J.J.Sm., **H44** 714, **S20** 663; *Saccolabium densiflorum* Lindl., **FMP4** 170; pendulous epiphyte to 50 cm long; lowlands; widespread.

233.123.1 **Sarcoglyphis pensilis** (Ridl.) Seidenf., **S20** 617; *Saccolabium pensile* (Ridl.) Ridl., **FMP4** 170; *Sarcanthus pensilis* Ridl., **H44** 659; epiphyte to 30 cm long; lowlands; Kota Gelanggi, Ph, and Batu Pahat, Jh; endemic.

233.124.1 **Sarcostoma javanica** Blume, **H44** 499, **S20** 317; *Ceratostylis cryptantha* Ridl., **FMP4** 110; *Ceratostylis linearis* Ridl., **FMP4** 110; tufted epiphyte barely 5 cm tall; lowlands and mountains; quite widespread.

233.125.1 **Schoenorchis micrantha** Blume, **H44** 663, **S20** 597; *Saccolabium perpusillum* Hook.*f*., **FMP4** 171; tufted epiphyte about 15 cm tall; lowlands; Pk and Ph southward.

233.125.2 **Schoenorchis minutiflora** (Ridl.) J.J.Sm., **H44** 663, **S20** 597; *Saccolabium minutiflorum* Ridl., **FMP4** 171; epiphyte about 15 cm tall; montane forest; Main Range.

233.125.3 **Schoenorchis secundiflora** (Ridl.) J.J.Sm., **H44** 662, **S20** 597; *Saccolabium secundiflorum* Ridl., **FMP4** 173; small epiphyte to 10 cm tall; on old riverside and mangrove trees; Ph southward.

233.126.1 **Smitinandia micrantha** (Lindl.) Holttum, **S20** 592; *Saccolabium fissum* Ridl., **FMP4** 173; *Ascocentrum micranthum* (Lindl.) Holttum, **H44** 735; epiphyte to 20 cm long; P. Langkawi, Kd.

233.127.1 **Spathoglottis affinis** de Vriese, **FMP4** 118, **H44** 162, **S20** 161; herb to 50 cm tall; open rocky places 600–900 m; known only from Gg Jerai, Kd.

233.127.2 **Spathoglottis aurea** Lindl., **FMP4** 117, **H44** 165, **S20** 162; herb to 60 cm tall; grassy spots in the mountains at 900–1500 m; widespread.

233.127.3 **Spathoglottis gracilis** Rolfe *ex* Hook.*f.*, **H44** 165, **S20** 161; herb; montane forest at 900 m; P. Tioman.

233.127.4 **Spathoglottis hardingiana** C.S.P. Parish & Rchb.*f.*, **FMP4** 118 '*handingiana*', **H44** 166, **S20** 163; herb about 25 cm tall; on limestone near the sea; P. Langkawi.

233.127.5 **Spathoglottis microchilina** Kraenzl., **H44** 165, **S20** 163; herb; mountains above 900 m; Taiping Hills and Main Range.

233.127.6 **Spathoglottis plicata** Blume, **FMP4** 117, **H44** 166, **S20** 161; herb to 2 m tall; grassy places to 700 m; common and widespread in the lowlands.

233.128.1 **Spiranthes sinensis** (Pers.) Ames, **S20** 47; *Spiranthes lancea auct. non* (Thunb.) Backer & al., **H44** 141; herb to 25 cm tall; montane forest; Ph.

233.129.1 **Staurochilus fasciatus** (Rchb.*f.*) Ridl., **FMP4** 157, **S20** 604; *Trichoglottis fasciata* Rchb.*f.*, **H44** 644; climbing plant to 60 cm long; on rocks and trees; P. Langawi, Kd.

233.129.2 **Staurochilus ramosus** (Lindl.) Seidenf., **S20** 607; epiphyte dubiously native; ?Pk.

233.130.1 **Stereosandra javanica** Blume, **FMP4** 224, **H44** 108, **S20** 143; tuberous saprophytic herb to 60 cm tall; lowland and montane forest; several localities.

233.131.1 **Taeniophyllum annuliferum** Carr, **H44** 593, **S20** 579; tiny leafless epiphyte with spreading green roots, barely 1 cm tall; once from Gua Musang, Kd; endemic.

233.131.2 **Taeniophyllum calceolus** Carr, **H44** 592, **S20** 579; tiny leafless epiphyte with flat green roots, barely 3 cm tall; Ps, P. Langkawi.

233.131.3 **Taeniophyllum campanulatum** Carr, **H44** 590, **S20** 575; tiny leafless epiphyte with flat green roots, barely 1 cm tall; montane forest; once from Fraser's Hill, Ph; endemic.

233.131.4 **Taeniophyllum filiforme** J.J.Sm., **H44** 593, **S20** 579; *Taeniophyllum macrorrhizum* Ridl., **FMP4** 176; small leafless epiphyte with spreading green roots; lowlands; widespread.

233.131.5 **Taeniophyllum glandulosum** Blume, **S20** 575; *Taenioiphyllum tjibodasanum* J.J.Sm., **H44** 590; *Taeniophyllum viride* Carr, **H44** 590; tiny leafless epiphyte with flat green roots, to 5 cm tall; lowlands and mountains; Tg, Ph.

233.131.6 **Taeniophyllum gracillimum** Schltr., **S20** 577; *Taeniophyllum culiciferum* Ridl., **FMP4** 176, **H44** 592; tiny leafless epiphyte with flat green roots, about 3 cm tall; lowland forest; Kl, Ph.

233.131.7 **Taeniophyllum intermedium** Carr, **H44** 590, **S20** 575; tiny leafless epiphyte with flat green roots, about 3 cm tall; Tg, Ph; endemic.

233.131.8 **Taeniophyllum micranthum** Carr, **H44** 592, **S20** 577; tiny leafless epiphyte with spreading green roots, barely 1 cm tall; montane forest; Fraser's Hill and Cameron Highlands, Ph; endemic.

233.131.9 **Taeniophyllum montanum** Carr, **H44** 592, **S20** 577; tiny leafless epiphyte with flat green roots, about 2 cm tall; montane forest; Fraser's Hill and Cameron Highlands, Ph; endemic.

233.131.10 **Taeniophyllum obtusum** Blume, **H44** 592, **S20** 577; *Taeniophyllum serrula* Hook.*f.*, **FMP4** 176; tiny leafless epiphyte with flat green roots, about 2 cm tall; exposed lowland trees; widespread.

233.131.11 **Taeniophyllum pahangense** Carr, **H44** 590, **S20** 572; leafless epiphyte with spreading green roots, about 3 cm tall; lowlands and mountains; Ph.

233.131.12 **Taeniophyllum pallidiflorum** Carr, **H44** 592, **S20** 579; tiny leafless epiphyte with spreading green roots, to 3 cm tall; only known from trees by the Sg Tahan, Ph; endemic.

233.131.13 **Taeniophyllum rostratum** Carr, **H44** 593, **S20** 579; tiny leafless epiphyte with spreading green roots, to 2 cm tall; lowland forest; known only from Tembeling, Ph; endemic.

233.131.14 **Taeniophyllum rubrum** Ridl., **FMP4** 177, **H44** 589, **S20** 572; tiny leafless epiphyte with spreading green roots, about 2 cm tall; Ph, NS.

233.131.15 **Taeniophyllum rugulosum** Carr, **H44** 591, **S20** 575; small leafless epiphyte with flat green roots, to nearly 5 cm tall; lowland forest; known only from near the Sg Sat, Ph; endemic.

233.131.16 **Taeniophyllum stella** Carr., **H44** 590, **S20** 575; small leafless epiphyte with flat green roots, about 1 cm tall; lowland forest; Ph.

233.132.1 **Tainia maingayi** Hook.*f*., **FMP4** 114, **H44** 182, **S20** 153; creeping herb to 125 cm tall; rocky places in the mountains; north of the Peninsula.

233.132.2 **Tainia paucifolia** (Breda) J.J.Sm., **S20** 156; *Tainia latilingua* Hook.*f*., **FMP4** 114, **H44** 183; herb to 60 cm tall; montane forest; Pk, Ph, Sl, Jh.

233.132.3 **Tainia speciosa** Blume, **FMP4** 114, **H44** 182, **S20** 153; herb to 50 cm; montane forest; widespread.

233.132.4 **Tainia vegetissima** Ridl., **FMP4** 114, **H44** 183, **S20** 156; herb about 20 cm tall; montane forest; only known from Gg Tahan.

233.133.1 **Thecopus maingayi** (Hook.*f*.) Seidenf., **S20** 560; *Thecostele maingayi* Hook.*f*., **FMP4** 192, **H44** 559; ?*Thecostele quinquefida* Hook.*f*., **FMP4** 192; epiphyte about 20 cm tall; lowland forest; Ml.

233.133.2 **Thecopus secunda** (Ridl.) Seidenf., **S20** 560; *Thecostele secunda* Ridl., **FMP4** 192, **H44** 558; epiphyte about 20 cm tall; montane forest; Pk, Jh.

233.134.1 **Thecostele alata** (Roxb.) C.S.P. Parish & Rchb.*f*., **H44** 558, **S20** 562; *Thecostele maculosa* Ridl., **FMP4** 191; *Thecostele zollingeri* Rchb.*f*., **FMP4** 192; epiphyte about 20 cm tall; lowlands; widespread but uncommon.

233.135.1 **Thelasis carinata** Blume, **FMP4** 200, **H44** 550, **S20** 341; epiphyte to about 30 cm tall; lowlands; widespread and common.

233.135.2 **Thelasis macrobulbon** Ridl., **FMP4** 199, **H44** 550, **S20** 339; epiphyte about 30 cm tall; lowlands and montane forest; Pk, Ph.

233.135.3 **Thelasis micrantha** (Brongn.) J.J.Sm., **H44** 551, **S20** 341; *Thelasis decurva* Hook.*f*., **FMP4** 200; tufted epiphyte to about 30 cm tall; on riverside trees or in forests on limestone; widespread.

233.135.4 **Thelasis pygmaea** (Griff.) Blume, **S20** 341; *Thelasis elongata* Blume, **FMP4** 199; *Thelasis capitata* (*non* Blume) Ridl., **FMP4** 199; *Thelasis triptera* Rchb.*f*., **H44** 550; epiphyte to 25 cm tall; on old riverside and mangrove trees or on limestone; quite widespread.

233.135.5 **Thelasis succosa** Carr, **H44** 550, **S20** 339; to 20 cm tall; on limestone; Gua Musang, Kl, Kota Gelanggi and Bt Chintamani, Ph; endemic.

233.136.1 **Thrixspermum acuminatissimum** (Blume) Rchb.*f*., **H44** 600, **S20** 639; *Thrixspermum notabile* (Hook.*f*.) Ridl., **FMP4** 186; epiphyte about 10 cm tall; lowlands; Kl and Sl southward.

233.136.2 **Thrixspermum amplexicaule** (Blume) Rchb.*f*., **H44** 602, **S20** 645; *Thrixspermum lilacinum* (Griff.) Rchb.*f*., **FMP4** 184; long climbing epiphyte; open places in the lowlands; widespread.

233.136.3 **Thrixspermum brevibracteatum** J.J.Sm., **H44** 605, **S20** 647; epiphyte to 50 cm or more long; montane forest; Gg Korbu, Pk, and Cameron Highlands, Ph.

233.136.4 **Thrixspermum brevicapsularis** Holttum, **H44** 609, **S20** 651; epiphyte about 20 cm long; montane forest; Cameron Highlands and Gg Ulu Kali, Ph; endemic.

233.136.5 **Thrixspermum calceolus** (Lindl.) Rchb.*f*., **FMP4** 184, **H44** 604, **S20** 645; long creeping plant; on lowland rocks or trees; widespread.

233.136.6 **Thrixspermum carinatifolium** (Ridl.) Schltr., **H44** 608, **S20** 649; *Dendrocolla carinatifolia* (Ridl.) Ridl., **FMP4** 189; epiphyte about 20 cm long; on trees near the sea; southeast Jh and P. Aur.

233.136.7 **Thrixspermum carnosum** (Ridl.) Schltr., **H44** 611, **S20** 653; *Dendrocolla carnosa* Ridl., **FMP4** 188; epiphyte about 5 cm tall; Pn, Pk; endemic.

233.136.8 **Thrixspermum centipeda** Lour., **S20** 643; *Thrixspermum arachnites* (Blume) Rchb.*f*., **FMP4** 185 in part, **H44** 601; epiphyte about 20 cm long; lowlands; widespread.

233.136.9 **Thrixspermum corneri** Holttum, **H44** 610, **S20** 653; epiphyte a few cm tall; on riverside trees; known only from type; Mawai, Jh; endemic.

233.136.10 **Thrixspermum crassifolium** Ridl., **FMP4** 186, **H44** 601, **S20** 643; epiphyte about 20 cm long; lowlands; Pk, Ph, Sl, Jh.

233.136.11 **Thrixspermum duplocallosum** Holttum, **H44** 608, **S20** 649; epiphyte about 5 cm tall; montane forest; only known from the Cameron Highlands, Ph; endemic.

233.136.12 **Thrixspermum iodochilus** Ridl., **FMP4** 186, **H44** 601, **S20** 643; epiphte about 10 cm long; known only from type; Bt Tangga, NS; endemic.

233.136.13 **Thrixspermum leucarachne** Ridl., **FMP4** 186, **H44** 601, **S20** 641; epiphyte about 20 cm long; P. Langkawi.

233.136.14 **Thrixspermum merguense** (Hook.*f*.) Kuntze, **S20** 653; tiny epiphyte about 3 cm tall; montane forest; collected once in the Cameron Highlands, Ph.

233.136.15 **Thrixspermum montanum** Ridl., **FMP4** 185, **H44** 606, **S20** 647; epiphyte about 20 cm long; known only from type; Ulu Langat, Sl; endemic.

233.136.16 **Thrixspermum pardale** (Ridl.) Schltr., **H44** 607, **S20** 647; *Dendrocolla pardalis* (Ridl.) Ridl., **FMP4** 187; epiphyte about 25 cm long; lowland trees; Pk, Ph.

233.136.17 **Thrixspermum pauciflorum** (Hook.*f.*) Ridl., **FMP4** 184, **H44** 604, **S20** 645; long climbing epiphyte; hill forest; known only from type; Taiping Hills, Pk; endemic.

233.136.18 **Thrixspermum platycaule** Holttum, **H44** 604, **S20** 645; *Sarcochilus anceps* Ridl., **FMP4** 180; pendulous epiphyte to 50 cm long; lowlands and ?mountains; ?Ph, Jh; endemic.

233.136.19 **Thrixspermum psiloglottis** (Ridl.) Schltr., **H44** 608, **S20** 649; *Dendrocolla psiloglottis* Ridl., **FMP4** 189; epiphyte about 10 cm long; known only from type; Kuala Pahang, Ph; endemic.

233.136.20 **Thrixspermum pulchrum** Carr, **H44** 607, **S20** 647; small epiphyte to 5 cm tall; known only from type; Kerambit, Ph; endemic.

233.136.21 **Thrixspermum cf. raciborskii** J.J.Sm., **S20** 639; epiphyte; montane forest; once at Cameron Highlands, Ph.

233.136.22 **Thrixspermum recurvum** (Hook.*f.*) Kuntze, **H44** 607, **S20** 649; *Dendrocolla pardalis* (*non* Ridl.) Ridl., **FMP4** 187 in part; epiphyte about 15 cm tall; on riverside trees; Pk, Ph.

233.136.23 **Thrixspermum ridleyanum** Schltr., **H44** 611, **S20** 651; *Dendrocolla maculata* Ridl., **FMP4** 188; *Thrixspermum rubrocallosum* Carr, **H44** 610; epiphyte about 10 cm tall; lowlands; Tg, Ph, NS, Jh, Sp.

233.136.24 **Thrixspermum sarcophyllum** Garay, **S20** 653; *Sarcochilus tahanensis* Ridl., **FMP4** 180, **H44** 688; epiphyte about 15 cm tall; montane forest; only known from type; at 1800 m on Gg Tahan, Ph; endemic.

233.136.25 **Thrixspermum scopa** (Rchb.*f. ex* Hook.*f.*) Holttum, **H44** 600, **S20** 641; *Thrixspermum arachnites* (*non* Rchb.*f.*) Ridl., **FMP4** 185 in part; long climbing epiphyte; widespread.

233.136.26 **Thrixspermum scortechinii** (Hook.*f.*) Ridl., **FMP4** 185, **H44** 600, **S20** 641; epiphyte to 40 cm long; montane forest; Kd, Pk, Sl; endemic.

233.136.27 **Thrixspermum tahanense** Carr, **H44** 601, **S20** 641; epiphyte to 40 cm long; montane forest; Gg Jerai, Kd, and Gg Tahan, Ph; endemic.

233.136.28 **Thrixspermum tenuicalcar** Carr, **H44** 610, **S20** 651; epiphyte about 10 cm tall; lowlands; Tg, Ph.

233.136.29 **Thrixspermum trichoglottis** (Hook.*f.*) Kuntze, **H44** 611, **S20** 655; *Dendrocolla trichoglottis* (Hook.*f.*) Ridl., **FMP4** 187; *Dendrocolla alba* Ridl., **FMP4** 188; *Thrixspermum album* (Ridl.) Schltr., **H44** 613; epiphyte to 10 cm long; lowlands; south of Peninsula.

233.137.1 **Thunia alba** (Lindl.) Rchb.*f.*, **FMP4** 125, **S20** 146; herb to 60 cm tall; only known from Bt Wang, Kd.

233.138.1 **Trichoglottis bipunctata** (C.S.P. Parish & Rchb.*f.*) T. Tang & F.T. Wang, **S20** 603; *Saccolabium miserum* Ridl., **FMP4** 171; *Trichoglottis misera* (Ridl.) Holttum, **H44** 643; epiphyte to 50 cm or more long; lowland and hill forest; P. Langkawi, Kd, Pn, Pk.

233.138.2 **Trichoglottis cirrhifera** Teijsm. & Binn., **H44** 642, **S20** 601; *Trichoglottis tetraceras* Ridl., **FMP4** 162; *Saccolabium cornigerum* Ridl., **FMP4** 171; *Saccolabium pantlingii* Ridl., **FMP4** 175; long-climbing epiphyte or epilith; Ps, P. Langkawi, Kd, Pn, Pk.

233.138.3 **Trichoglottis lanceolaria** Blume, **H44** 643, **S20** 603; pendulous epiphyte to 70 cm long; montane forest; Fraser's Hill, Ph, P. Tioman, and Gg Panti, Jh.

233.138.4 **Trichoglottis scapigera** Ridl., **S20** 599, **H44** 641, **FMP4** 162; long trailing epiphyte; Kd, Pg.

233.138.5 **Trichoglottis retusa** Blume, **FMP4** 162, **H44** 642, **S20** 601; long climbing plant; on rocks including limestone; Kl, Ph, Sl.

233.138.6a **Trichoglottis winkleri** J.J.Sm. var. **minor** J.J.Sm., **H44** 642, **S20** 601, **H44** 642; pendulous epiphyte to 60 cm or more long; known only from Kota Gelenggi, Ph.

233.138.6b **Trichoglottis winkleri** J.J.Sm. var. **winkleri**, **H44** 641, **S20** 601; pendulous epiphyte to 60 cm or more long; Cameron Highlands and Port Swettenham.

233.139.1 **Trichotosia aporina** (Hook.*f.*) Kraenzl., **FMP4** 102, **S20** 265; *Eria aporina* Hook.*f.*, **H44** 360; tufted epiphyte to 15 cm tall; montane forest; Kd, Pk, Ph.

233.139.2 **Trichotosia ferox** Blume, **FMP4** 101, **S20** 262; *Trichotosia pyrrhotricha* (Ridl.) Ridl., **FMP4** 101; *Eria ferox* (Blume) Blume, **H44** 359; plant to 2 m tall; on rocks in the mountains; widespread.

233.139.3 **Trichotosia gracilis** (Hook.*f.*) Kraenzl., **FMP4** 104, **S20** 268; *Trichotosia oligantha* (Hook.*f.*) Kraenzl., **FMP4** 103; *Eria gracilis* Hook.*f.*, **H44** 362; epiphyte to 20 cm long; lowlands and mountains; widespread.

233.139.4 **Trichotosia hispidissima** (Ridl.) Kraenzl., **FMP4** 102, **S20** 265; *Eria hispidissima* Ridl., **H44** 360; epiphyte about 15 cm tall; known only from type; Ulu Langat, Sl; endemic.

233.139.5 **Trichotosia microphylla** Blume, **FMP4** 102, **S20** 261; *Eria microphylla* (Blume) Blume, **H44** 360; creeping plant to 10 cm tall; in the mountains; Ph, Sl.

233.139.6 **Trichotosia pauciflora** Blume, **S20** 268; *Trichotosia biflora* Griff., **FMP4** 103; *Trichotosia tuberosa* (Hook.*f.*) Kraenzl., **FMP4** 103; *Eria monticola* Hook.*f.*, **H44** 363; epiphyte to 60 cm long; montane forests at 900–1200 m; widespread.

233.139.7 **Trichotosia poculata** (Ridl.) Kraenzl., **FMP4** 103, **S20** 268; *Eria poculata* Ridl., **H44** 363; epiphyte to 100 cm long; montane forest about 900 m; widespread.

233.139.8 **Trichotosia rotundifolia** (Ridl.) Kraenzl., **FMP4** 102, **S20** 261; *Eria rotundifolia* Ridl., **H44** 360; creeping epiphyte a few cm tall; P. Langkawi, Pn.

233.139.9 **Trichotosia teysmannii** (J.J.Sm.) Kraenzl., **S20** 262; *Eria teysmanii* J.J.Sm., **H44** 359; pendulous epiphyte to 200 cm long; often on riverside trees; Kl, Ph, Jh.

233.139.10 **Trichotosia velutina** (Lodd. *ex* Lindl.) Kraenzl., **FMP4** 101, **S20** 265; *Eria velutina* Lodd. *ex* Lindl., **H44** 361; epiphyte to 40 cm tall; lowlands; widespread and common.

233.139.11 **Trichotosia vestita** (Lindl.) Kraenzl., **FMP4** 100, **S20** 262; *Eria vestita* Lindl., **H44** 359; epiphyte to 200 cm long; lowlands and mountains; widespread.

233.140.1 **Tropidia angulosa** (Lindl.) Blume, **FMP4** 209, **H44** 142, **S20** 50; herb about 30 cm tall; once near Ipoh, Pk.

233.140.2 **Tropidia curculigoides** Lindl., **FMP4** 209, **H44** 143, **S20** 53; herb to nearly 100 cm tall; lowland and mountane forest; widespread.

233.140.3 **Tropidia graminea** Blume, **H44** 143, **S20** 53; herb to nearly 100 cm tall; lowland and montane forest; widespread.

233.140.4 **Tropidia pedunculata** Blume, **H44** 142, **S20** 51; *Tropidia maingayi* Hook.*f.*, **FMP4** 209; herb 50–100 cm tall; in damp lowland and montane forest; widespread.

233.141.1 **Tuberolabium rhopalorrhachis** (Rchb.*f.*) J.J. Wood, **S20** 698; *Dendrocolla brachyglottis* (Hook.*f.*) Ridl., **FMP4** 189; *Saccolabium rhopalorrhachis* (Rchb.*f.*) J.J.Sm., **H44** 737; epiphyte about 10 cm tall; montane forest; Pk, Ph.

233.142.1 **Vanda helvola** Blume, **H44** 716, **S20** 660; epiphyte to 50 cm long; Pk, Sl.

233.143.1 **Vandopsis gigantea** (Lindl.) Pfitz., **H44** 647, **S20** 588; *Stauropsis gigantea* (Lindl.) Benth. & Hook.*f*., **FMP4** 155; large epiphyte; Ps, P. Langkawi, Tg, Ml.

233.144.1 **Vanilla albida** Blume, **S20** 127; *Vanilla montana* Ridl., **FMP4** 201, **H44** 97; long stout climber; montane forest at 1350 m; once from Gg Korbu, Pk.

233.144.2 **Vanilla aphylla** Blume, **FMP4** 201, **H44** 98, **S20** 127; climber; on low bushes in open places; Ps.

233.144.3 **Vanilla griffithii** Rchb.*f*., **FMP4** 201, **H44** 95, **S20** 125; climber; on trees in fairly open places; throughout.

233.144.4 **Vanilla kinabaluensis** Carr, **H44** 96, **S20** 125; climber; montane forest; Ph.

233.144.5 **Vanilla pilifera** Holttum, **H44** 95, **S20** 125; climber; known only from Kota Tinggi, Jh.

233.145.1 **Ventricularia tenicaulis** (Hook.*f*.) Garay, **S20** 592; *Saccolabium tenicaule* Hook.*f*., **FMP4** 171; *Uncifera tenuicaulis* (Hook.*f*.) Holttum, **H44** 665; pendulous plant to 30 cm long; chiefly on limestone; P. Langkawi, Pn, Pk, Ph, Sl.

233.146.1 **Vrydagzynea albida** (Blume) Blume, **FMP4** 211, **H44** 138, **S20** 65; herb to 25 cm tall; lowland and montane forest; Pk, Ph, Sp.

233.146.2 **Vrydagzynea lancifolia** Ridl., **FMP4** 210, **H44** 137, **S20** 65; herb to 20 cm tall; lowland forest; widespread.

233.146.3 **Vrydagzynea tristriata** Ridl., **FMP4** 221, **H44** 138, **S20** 65; herb to 10 cm tall; damp lowland forest; Pk, Ph, Jh, Sp.

233.147.1 **Zeuxine affinis** (Lindl.) Benth. *ex* Hook.*f*., **FMP4** 217, **S20** 89; *Zeuxine gracilis auct. non* (Breda) Blume, **H44** 136 in part; herb to 20 cm tall; hill forest; Government Hill, Pn.

233.147.2 **Zeuxine clandestina** Blume, **FMP4** 217, **H44** 135, **S20** 89; herb 10–25 cm tall; open places in lowlands; widespread.

233.147.3 **Zeuxine gracilis** (Breda) Blume, **H44** 136 in part, **S20** 89; herb to 20 cm tall; once from Tembeling, Ph.

233.147.4 **Zeuxine palustris** Ridl., **FMP4** 217, **H44** 135, **S20** 87; herb to 30 cm tall; damp grassy places; only known from type; Ulu Temengor, Pk; endemic.

233.147.5 **Zeuxine parvifolia** (Ridl.) Seidenf., **S20** 87; *Hetaeria parvifolia* Ridl., **FMP4** 223, **H44** 117; herb about 25 cm tall; in the hills; Pn, Pk.

233.147.6 **Zeuxine purpurascens** Blume, **H44** 134, **S20** 85; herb to 10 cm tall; once from Tembeling, Ph.

233.147.7 **Zeuxine reniformis** Hook.*f*., **FMP4** 217, **H44** 134, **S20** 85; herb about 30 cm tall; only known from type; an old collection from Pk; endemic.

233.147.8 **Zeuxine rupestris** Ridl., **FMP4** 218, **H44** 136, **S20** 89; herb 14–20 cm tall; once on Penang Hill; endemic.

233.147.9 **Zeuxine strateumatica** (L.) Schltr., **H44** 133, **S20** 85; *Zeuxine sulcata* Lindl., **FMP4** 217; herb 12–20 cm tall; once near Malacca.

233.147.10 **Zeuxine violascens** (Blume) Ridl., **FMP4** 218, **H44** 135, **S20** 85; herb to 20 cm tall; damp lowland forest; once at Tanjung Kupang, Jh.

234. PALMAE

234.1.1 **Areca latiloba** Ridl., **FMP5** 3; *Areca montana* Ridl., **FMP5** 4; single-stemmed feather palm; forest understorey.

234.1.2 **Areca ridleyana** Furtado, **W14** 35; single-stemmed feather palm about 1 m tall; understorey of hill forest; Tg, Ph, Jh; endemic.

234.1.3 **Areca triandra** Roxb. *ex* Buch.-Ham., **FMP5** 4, **W14** 35; clumping feather palm to 6 m tall; understorey of lowland and mountain forest; widespread.

234.1.4 **Areca tunku** J. Dransf. & C.K. Lim, **D34** 81; stilt-rooted feather palm to 2.5 m tall; hill forest; Tg, Pk, Jh.

234.2.1 **Arenga hastata** (Becc.) Whitmore, **W11** 124, **W14** 37; *Didymosperma hastata* Becc., **FMP5** 20; clustering feather palm to 1 m tall; lowland forest, sometimes on limestone; Tg, Pk, Ph, Sl, Jh.

234.2.2 **Arenga hookeriana** (Becc.) Whitmore, **W11** 124, **W14** 37; *Didymosperma hastata* Becc., **FMP5** 20; tiny clustering feather palm to 50 cm tall; lowland forest including on limestone; widespread.

234.2.3 **Arenga obtusifolia** Mart., **K45** 27.

234.2.4 **Arenga pinnata** (Wurmb) Merr., **W14** 37; *Arenga saccharifera* Labill.; feather palm to 10 m tall or more; naturalizing around villages; native of Assam and Burma.

234.2.5 **Arenga westerhoutii** Griff., **FMP5** 19, **W14** 38; feather palm to 10 m or more tall; locally gregarious in hillside forest including on limestone; widespread.

234.3.1 **Borassodendron machadonis** (Ridl.) Becc., **D26** 353, **W14** 39; *Borassus machadonis* Ridl., **FMP5** 71; fan palm to 20 m tall; lowland forest including on limestone; Kl, Pk.

234.4.1 **Calamus axillaris** Becc., **D29** 135; rattan to 40 m long; lowland swamp forest; Ph, Pk, Jh; endemic.

234.4.2 **Calamus balingensis** Furtado, **D29** 234; rattan to 12 m tall; only known from type, Gg Baling, Kd; endemic.

234.4.3 **Calamus blumei** Becc., **D29** 192; clustering rattan climbing to 15 m tall; swampy or wet forest to 800 m; Pk, Ph, Sl, NS, Jh.

234.4.4 **Calamus burkillianus** Becc. *ex* Ridl., **FMP5** 56, **D29** 241; clustering rattan climbing to 20 m; forming thickets near the sea; Tg, Ph, Jh; endemic.

234.4.5 **Calamus caesius** Blume, **FMP5** 60, **W14** 43, **D29** 135; clustering rattan to 100 m long; swampy and wet lowland forests; Pk, Ph, Sl, NS, Ml, Jh.

234.4.6 **Calamus castaneus** Griff., **FMP5** 63, **W14** 43, **D29** 130; stemless feather palm about 1.5 m tall; lowland and hill forest to 800 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh.

234.4.7 **Calamus cockburnii** J. Dransf., **D29** 173; short-stemmed erect rattan; hill forest; only known from Gg Tapis, Ph; endemic.

234.4.8 **Calamus concinnus** Martelli, **FMP5** 59 in part, **D29** 230; *Plectocomiopsis ferox* Ridl., **FMP5** 66; rosette-forming rattan; lowland forest; Ps, Kd, Pk.

234.4.9 **Calamus conirostris** Becc., **FMP5** 60, **D29** 186; clustering rattan climbing to 10 m; steep slopes in hill forest; Tapah, Pk, and Bt Lagong, Sl.

234.4.10 **Calamus corneri** Furtado, **D29** 219; clustering rattan climbing to 20 m; lowland forest; Ulu Kemaman, Tg, and near Kuantan, Ph; endemic.

234.4.11 **Calamus densiflorus** Becc., **FMP5** 53, **D29** 244; *Calamus neglectus* Becc., **FMP5** 62; clustering high-climbing rattan 30–40 m tall; lowland forest to 600 m; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp; endemic.

234.4.12 **Calamus diepenhorstii** Miq., **FMP5** 55, **D29** 246; clustering rattan climbing to 20 m; lowland and hill forests to 700 m; Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

234.4.13 **Calamus endauensis** J. Dransf., **D29** 152; slender clustering rattan to 25 m tall; hill forest at 200 m; known only from type, Gg Janing, Jh; endemic.

234.4.14 **Calamus erinaceus** (Becc.) J. Dransf., **D29** 130; *Calamus aqautilis* Ridl., **FMP5** 63; robust thicket-forming rattan; backs of mangrove swamps, coastal sand bars; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

234.4.15 **Calamus exilis** Griff., **FMP5** 54, **D29** 176; *Calamus curtisii* Ridl., **FMP5** 54; solitary or clustering rattan to 15 m tall; lowlands and hills to 1000 m; Tg, Pn, Pk, Ph, Sl, Ml, Jh.

234.4.16 **Calamus filipendulus** Becc., **FMP5** 51, **D29** 205; *Calamus pauciflorus* Ridl., **FMP5** 57; slender clustering rattan to 5 m tall; lowlands and hills; Pk, Ph, Sl; endemic.

234.4.17 **Calamus flabellatus** Becc., **D29** 195; *Calamus flabelloides* Furtado, **D29** 195; very slender clustering rattan; swamp forest; only known from Sg Kayu, Jh.

234.4.18 **Calamus holttumii** Furtado, **D29** 222; solitary rattan climbing to 15 m tall; hill forest; Bt Bauk, Tg, and Gg Panti and Ulu Endau, Jh; endemic.

234.4.19a **Calamus insignis** Griff. var. **insignis**, **FMP5** 51, **D29** 212; slender clustering rattan climbing high; lowland and hill forest to 800 m; Kd, Tg, Pk, Ph, Sl, NS, Jh; endemic variety.

234.4.19b **Calamus insignis** Griff. var. **longispinosus** J. Dransf., **D29** 213; slender solitary rattan climbing high; steep slopes and ridgetops in hill forest 100–1000 m; Kd, Tg, Pk, Ph, Sl, NS.

234.4.19c **Calamus insignis** Griff. var. **robustus** (Becc.) J. Dransf.; slender clustering rattan climbing high; lowland forest; Pk; endemic variety.

234.4.20 **Calamus javensis** Blume, **FMP5** 49, **D29** 198; slender clustering rattan to 10 m tall; lowland and hill forests to 1200 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

234.4.21 **Calamus laevigatus** Martelli, **D29** 138; *Calamus pallidulus* Becc., **FMP5** 62 '*pallidus*'; solitary rattan to 30 m long; lowland and hill forests to 800 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.

234.4.22 **Calamus laxissimus** Ridl., **FMP5** 63, **D29** 170; solitary rattan to 3 m long; Kl, Ph, Jh; endemic.

234.4.23 **Calamus lobbianus** Becc., **FMP5** 59, **D29** 190; solitary rattan, stem to 50 cm tall; lowland and hill forest; Kl, Ph, Sl, NS, Jh, Sp.

234.4.24 **Calamus longisetus** Griff., **D29** 154; clustering rattan to 5 m tall; lowland forest; P. Langkawi.

234.4.25 **Calamus longispathus** Ridl., **FMP5** 62, **D29** 179; thicket-forming rattan to 7 m tall; ridgetops in hill forest; Tg, Pk, Ph, Sl, NS, Ml, Jh.

234.4.26 **Calamus luridus** Becc., **FMP5** 56 in part, **D29** 237; *Calamus distans* Ridl., **FMP5** 56; *Calamus laxiflorus* Becc., **FMP5** 56; slender clustering rattan to 15 m tall; lowland to lower montane forest at 1400 m; Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp; endemic.

234.4.27 **Calamus manan** Miq., **FMP5** 53, **D29** 143; massive solitary rattan reaching 100 m long; lowland and, more commonly, hill forest to 1000 m; Kl, Tg, Pk, Ph, Sl, NS, Jh.

234.4.28 **Calamus minutus** J. Dransf., **D29** 173; stemless feather palm to 60 cm tall; steep slopes in lowland forest at 150 m; only known from Ulu Setiu F.R., Tg; endemic.

234.4.29 **Calamus moorehousei** Furtado, **D29** 234; rattan; lowland forest; known only from type; Kuala Pilah, NS; endemic.

234.4.30 **Calamus multirameus** Ridl., **D29** 157; slender rattan; Ph, Pk; endemic.

234.4.31 **Calamus ornatus** Blume, **FMP5** 53, **D29** 201; large clustering rattan to 50 m long; lowland to lower montane forests at 1100 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.

234.4.32a **Calamus oxleyanus** Teijsm. & Binn. var. **montanus** Furtado, **D29** 148; solitary or clustering rattan to 5 m long; montane forest; known only from Gg Padang, Tg; endemic variety.

234.4.32b **Calamus oxleyanus** Teijsm. & Binn. var. **oxleyanus**, **FMP5** 62, **D29** 148; solitary or clustering rattan to 5 m long; lowland forest on gentle slopes; Tg, Ph, Sl, NS, Ml, Jh, Sp.

234.4.33 **Calamus padangensis** Furtado, **D29** 176; clustering rattan; montane forest at 1300 m; known only from type; Gg Padang, Tg; endemic.

234.4.34 **Calamus palustris** Griff. var. **malaccensis** Becc., **FMP5** 61, **D29** 140; *Calamus dumetorum* Ridl., **FMP5** 63; clustering rattan to 25 m tall; secondary forest; Pn, Pk; endemic variety.

234.4.35 **Calamus pandanosmus** Furtado, **D29** 201; clustering rattan to 15 m tall; lowland forest; once each from Tg and Ph.

234.4.36 **Calamus paspalanthus** Becc., **FMP5** 55, **D29** 157; solitary rattan to 20 m tall; lowland forest to 500 m; Kl, Pk, Sl, Jh.

234.4.37 **Calamus penicillatus** Roxb., **D29** 216; *Calamus penangensis* Ridl., **FMP5** 51; extremely slender clustering rattan to 40 m tall; hill forest at 650 m; Penang Hill; endemic.

234.4.38a **Calamus perakensis** Becc. var. **crassus** J.Dransf., **D29** 167; solitary rattan to 2 m long; slopes in lowland forest at 100–500 m; Tg; endemic variety.

234.4.38b **Calamus perakensis** Becc. var. **niger** J. Dransf., **D29** 167; solitary rattan to 5 m long; swamp forest margins; Jh; endemic.

234.4.38c **Calamus perakensis** Becc. var. **perakensis**, **FMP5** 58, **D29** 164; clustering rattan to 3 m long, often stemless; lower montane forest at 900–1500 m; Pk, Ph, Sl.

234.4.39 **Calamus peregrinus** Furtado, **D29** 183; solitary rattan to 20 m tall; slopes and ridges in hill forest to 600 m; Kd, Kl, Pk, Sl, NS; endemic.

234.4.40 **Calamus polystachys** Becc., **D29** 132; thicket-forming rattan climbing high; only known from Mentakab, Ph, and P. Tioman.

234.4.41 **Calamus pycnocarpus** (Furtado) J. Dransf., **D29** 186; slender clustering rattan to 30 m tall; lowland forest; only known from Kemaman, Tg; endemic.

234.4.42 **Calamus radulosus** Becc., **FMP5** 57, **D29** 226; rattan climbing 10–15 m; only known from two collection from Pk; endemic.

234.4.43 **Calamus ridleyanus** Becc., **FMP5** 54, **D29** 246; clustering rattan climbing to 30 m; lowland forest; Tg, Jh, Sp; endemic.

234.4.44 **Calamus rugosus** Becc., **FMP5** 58, **D29** 219; slender rattan climbing to 8 m; lowland and hill forest; Pk, Ph, Jh.

234.4.45 **Calamus scabridulus** Becc., **FMP5** 58, **D29** 226; clustering rattan to 20 m tall; peat swamp forest; Tg, Sl, Jh.

234.4.46 **Calamus scipionum** Lour., **FMP5** 52, **D29** 203; massive clustering rattan climbing to a great height; lowlands, rarely above 200 m; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh.

234.4.47 **Calamus sedens** J. Dransf., **D29** 161; *Calamus ramosissimus auct. non* Griff., **FMP5** 58; rattan, often stemless, to 2 m tall; hill forest to 1100 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh; endemic.

234.4.48 **Calamus senalingensis** J. Dransf., **D29** 216; solitary rattan climbing to 15 m tall; only known from Bt Senaling, Kuala Pilah, NS; endemic.

234.4.49 **Calamus setulosus** J. Dransf., **D29** 237; slender rattan; lowland forest including on limestone; twice from Pk; endemic.

234.4.50 **Calamus siamensis** Becc. var. **malaianus** Furtado, **FMP5** 59, **D29** 230; clustering rattan to 5 m tall; open ground in the lowlands; Ps, Kd.

234.4.51 **Calamus simplex** Becc., **D29** 140; thicket-forming rattan to 6 m tall; lower montane forest mostly at 1500–2000 m; Pk, Ph; endemic.

234.4.52 **Calamus speciosissimus** Furtado, **D29** 205; clustering rattan to 25 m tall; lowland forest including swamps; Tg, Ph, Sl, NS, Ml, Jh; endemic.

234.4.53 **Calamus spectatissimus** Furtado, **D29** 179; clustering rattan climbing to 20 m; lowland forest; once from Kroh, Pk.

234.4.54 **Calamus tanakadatei** Furtado, **D29** 222; rattan to 20 m tall; lowland and hill forest to 500 m; Tg, Ph, Sl, NS, Jh; endemic.

234.4.55 **Calamus tomentosus** Becc., **FMP5** 52, **D29** 192; clustering rattan to 20 m tall; steep slopes in hill forest to 800 m; Tg, Pk.

234.4.56 **Calamus tumidus** Furtado, **D29** 145; solitary rattan to 60 m long; swampy lowland forest; Tg, Ph, NS, Jh.

234.4.57 **Calamus ulur** Becc., **D29** 152; clustering rattan to 10 m tall; swamp forest; only known from the base of Gg Panti, Jh.

234.4.58 **Calamus viminalis** Willd. var. **fasciculatus** (Roxb.) Becc., **D29** 234; rattan; once from Pn.

234.4.59 **Calamus viridispinus** Becc., **FMP5** 61, **D29** 148; *Calamus brevispadix* Ridl., **FMP5** 61; *Calamus distichus* Ridl., **FMP5** 60; *Calamus elegans* Ridl., **FMP5** 61; slender clustering rattan to 10 m tall, sometimes stemless; montane forest at 1000–2200 m; Kl, Tg, Pk, Ph, Sl; endemic.

234.4.60 **Calamus whitmorei** J. Dransf., **FMP5** 170; slender solitary rattan to 3 m long; montane forest at 1300 m; known only from Gg Padang, Tg; endemic.

Calamus pulaiensis Becc. [**FMP5** 56, **D30** 248]; remains a doubtful species.

234.5.1 **Calospatha scortechinii** Becc., **FMP5** 47, **D29** 72; solitary rattan to 10 m long; valleys in hill forest; Bt Lagong and Ulu Semenyih, Sl, and Bt Tangga, NS; endemic.

234.6.1 **Caryota mitis** Lour., **FMP5** 21, **W14** 44; clump-forming fishtail palm to 4 m tall; lowland secondary forests; throughout.

234.6.2 **Caryota maxima** Blume, **D27** 89; *Caryota aequatorialis* (Becc.) Ridl., **FMP5** 20; *Caryota obtusa* Griff. var. *aequatorialis* Becc., **W14** 45; solitary fishtail palm to 30 m tall; montane forest at 1000–1500 m; Main Range.

234.7.1 **Ceratolobus kingianus** Becc., **FMP5** 46, **D29** 251; slender clustering rattan 5-8 m long; lowland forest including swamps; Tg, Pk, Ph; endemic.

234.7.2 **Ceratolobus subangulatus** (Miq.) Becc., **D29** 251; *Ceratolobus laevigatus* (Martelli) Becc., **FMP5** 46; clustering rattan to 15 m tall, usually shorter; lowland and hill forest to 800 m; Tg, Pk, Ph, Sl, Ml, Sp.

234.8.1 **Cocos nucifera** L., **W14** 48; large feather palm to 25 m tall; sandy shores, widely planted; all coasts.

234.9.1 **Corypha utan** Lam., **D36** 207, **K46** 28; *Corypha elata* Roxb., **FMP5** 22, **W14** 51; solitary fan palm to 20 m tall; lowlands; Ps, Kd, Kl, Sl.

234.10.1 **Cyrtostachys renda** Blume, **D36** 380, **K46** 28; *Cyrtostachys lakka* Becc., **FMP5** 17, **W14** 53; clump-forming feather palm with scarlet crown shaft to 12 m tall; peat swamp forest; scattered.

234.11.1 **Daemonorops angustifolia** (Griff.) Martelli, **FMP5** 36, **D29** 78; *Daemonorops carcharodon* Ridl., **FMP5** 40; *Daemonorops hygrophila* Griff., **FMP5** 40; thicket-forming rattan to 40 m tall; damp lowland forest, riverbanks; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

234.11.2 **Daemonorops brachystachys** Furtado, **D29** 94; rattan to 1 m tall; by streams in lowland forest; Kd, Kl, Pk, Sl.

234.11.3 **Daemonorops calicarpa** (Griff.) Martelli, **FMP5** 37, **D29** 85; *Daemonorops microthamna* Becc., **FMP5** 37; thicket-forming, usually stemless, feather palm; lowland and hill forest; Pk, Ph, Sl, NS, Ml, Jh.

234.11.4 **Daemonorops didymophylla** Becc., **FMP5** 41, **D29** 90; rattan to 15 m long; lowland and hill forest to 1000 m; Kl, Tg, Pn, Pk, Ph, Sl, NS, Jh, Sp.

234.11.5 **Daemonorops geniculata** (Griff.) Martelli, **FMP5** 44, **D29** 107; usually solitary rattan to 20 m tall; common in lowland and hill forest to 1000 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

234.11.6 **Daemonorops grandis** (Griff.) Martelli, **FMP5** 38, **D29** 80; clustering rattan climbing to 20 m; steep slopes in the hills to 900 m; Pk, Ph, Sl, NS, Ml, Sp.

234.11.7a **Daemonorops hystrix** (Griff.) Martelli var. **hystrix**, **FMP5** 42, **D29** 101; clustering rattan to 10 m tall; lowland forest to 300 m; Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

234.11.7b **Daemonorops hystrix** (Griff.) Martelli var. **minor** Becc., **FMP5** 43, **D29** 104; very slender rattan to 1.5 m tall; ridge-top forest to 1000 m; Kd, Tg, Pk; endemic variety.

234.11.8 **Daemonorops kunstleri** Becc., **FMP5** 43, **D29** 104; *Daemonorops vagans* Becc., **FMP5** 43; clustering rattan to 5 m tall, sometimes stemless; lowlands and mountains to 1400 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.

234.11.9 **Daemonorops leptopus** (Griff.) Martelli, **FMP5** 42, **D29** 96; clustering rattan to 15 m tall; lowland and hill forest to 1000 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp; endemic.

234.11.10 **Daemonorops lewisiana** (Griff.) Martelli, **FMP5** 38, **D29** 85; *Daemonorops pseudosepal* Becc., **FMP5** 40; thicket forming rattan rarely more than 2 m tall; lowlands and hills; Kd, Pn, Pk, Jh, Sp.

234.11.11 **Daemonorops longipes** (Griff.) Martelli, **FMP5** 44, **D29** 117; clustering rattan not high climbing; damp spots in lowland forest; Ph, NS, Ml, Jh, Sp.

234.11.12 **Daemonorops macrophylla** Becc., **FMP5** 46, **D29** 109; clustering rattan reaching to 20 m; lowland and hill forest to 800 m; Tg, Pk, Ph, Sl, NS, Jh; endemic.

234.11.13 **Daemonorops melanochaetes** Blume, **D29** 80; clustering rattan to 30 m tall; dry ground near the sea; Pk, Ph, NS, Ml, Jh.

234.11.14 **Daemonorops micracantha** (Griff.) Becc., **FMP5** 41, **D29** 96; rattan climbing to 20 m or more; lowland forest to 400 m; Tg, Pk, Ph, NS, Jh, Sp.

234.11.15 **Daemonorops monticola** (Griff.) Martelli, **FMP5** 37, **D29** 87; clustering rattan climbing to 5 m; hill forest; Pn, Jh; endemic.

234.11.16 **Daemonorops oligophylla** Becc., **D29** 112; slender clustering rattan; montane forest; only known from Gg Tambang Batak, Pk; endemic.

234.11.17 **Daemonorops periacantha** Miq., **FMP5** 44, **D29** 117; clustering rattan about 10 m long; lowland forest to 200 m; Jh, Sp.

234.11.18 **Daemonorops propinqua** Becc., **FMP5** 41, **D29** 94; thicket-forming rattan to 5 m tall; lowland swamps; Pk, Ph, Sl, Ml; endemic.

234.11.19 **Daemonorops sabut** Becc., **FMP5** 46, **D29** 109; clustering rattan to 20 m or more tall; alluvial or freshwater swamp forest to 250 m; Tg, Pk, Ph, NS, Jh, Sp.

234.11.20 **Daemonorops scapigera** Becc., **FMP5** 43, **D23** 65; *Daemonorops lasiospatha* Furtado, **D29** 114; solitary, almost stemless rattan; lowland forest; Jh.

234.11.21 **Daemonorops sepal** Becc., **FMP5** 36, **D29** 82; *Daemonorops scortechinii* Becc., **FMP5** 36; *Daemonorops imbellis* Becc., **FMP5** 41; clustering rattan to 10 m tall; slopes and ridges in montane forest; Kl, Tg, Pk, Ph, Sl; endemic.

234.11.22 **Daemonorops verticillatus** (Griff.) Martelli, **FMP5** 45, **D29** 112; usually solitary rattan to 15 m long; lowland and hill forest to 1000 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

234.12.1 **Eleiodoxa conferta** (Griff.) Burret, **D36** 249, **K46** 28; *Salacca conferta* Griff., **FMP5** 32 '*Zalacca*', **W14** 106; stemless thicket-forming feather palm to 6 m tall; wet places in lowland forest; throughout.

234.13.1 **Eugeissona brachystachys** Ridl., **FMP5** 34, **W14** 60; stemless feather palm to 6 m tall; lowland forest; Tg, Ph; endemic.

234.13.2 **Eugeissona tristis** Griff., **FMP5** 34, **W14** 59; clumping stemless feather palm to nearly 10 m tall; lowland and hill forest to about 700 m; ?Ps, Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh; endemic.

234.14.1 **Iguanura bicornis** Becc., **FMP5** 16, **K21** 204, **W14** 63; *Pinanga canina* Becc., **FMP5** 6; *Iguanura arakudensis* Furtado, **W14** 62; feather palm 1–2 m tall; hill and lower montane forest at 1000–1500 m; Kd, Pk.

234.14.2 **Iguanura corniculata** Becc., **FMP5** 15, **K21** 205, **W14** 63; feather palm 1–1.3 m tall; hill forest; Selama, Pk, and Bt Serdam (limestone), Ph; endemic.

234.14.3 **Iguanura polymorpha** Becc., **FMP5** 15 incl. var. *canina* Becc., **K21** 212, **W14** 64; *Iguanura ferruginea* Ridl., **FMP5** 15; *Iguanura brevipes* Hook.*f*., **W14** 63; solitary or clustering feather palm 1–3 m tall; lowlands and mountains to 1500 m; Kd, Kl, Tg, Pk.

234.14.4a **Iguanura wallichiana** (Wall. *ex* Martelli) Hook.*f*. ssp. **malaccensis** (Becc.) Kiew var. **elatior** Kiew, **K21** 223; simple-leaved palm 0.5–3.5 m tall; known only from Gg Belumut, Jh; endemic variety.

234.14.4b **Iguanura wallichiana** (Wall. *ex* Martelli) Hook.*f*. ssp. **malaccensis** (Becc.) Kiew var. **humilis** Kiew, **K21** 223; solitary, often stemless, simple-leaved palm to 1 m tall; known only from Kemaman, Tg; endemic variety.

234.14.4c **Iguanura wallichiana** (Wall. *ex* Martelli) Hook.*f*. ssp. **malaccensis** (Becc.) Kiew var. **malaccensis**, **K21** 222; *Iguanura geonomaeformis* Griff. *ex* Martelli, **FMP5** 13 incl. vars. *malaccensis* (Becc.) Ridl. and *ramosa* Ridl., **W14** 63; gregarious feather palm 1–2 m tall; along streams and other wet places in lowland forest; common south of Genting Simpah and Kemaman.

234.14.4d **Iguanura wallichiana** (Wall. *ex* Martelli) Hook.*f*. ssp. **wallichiana** var. **major** Becc. *ex* Hook.*f*., **K21** 221; *Iguanura spectabilis* Ridl., **FMP5** 14; simple-leaved palm 1.5–2.5 m tall; hill forest; Pk.

234.14.4e **Iguanura wallichiana** (Wall. *ex* Martelli) Hook.*f*. ssp. **wallichiana** var. **wallichiana**, **FMP5** 14, **K21** 221, **W14** 65; *Iguanura diffusa* Becc., **FMP5** 15; often gregarious feather palm 1–2 m tall; lowland and hill forest to 1000 m; north of Fraser's Hill and Sg Dungun.

234.15.1 **Johannesteijsmannia altifrons** (Rchb.*f*. & Zoll.) H.E. Moore, **D25** 68; *Teysmannia altifrons* Rchb.*f*. & Zoll., **FMP5** 31 in part, **W14** 110; solitary stemless simple-leaved palm to 6 m tall; primary lowland forest; Kl, Ph, Sl, Jh.

234.15.2 **Johannesteijsmannia lanceolata** J. Dransf., **D25** 78; solitary stemless simple-leaved palm to 3.5 m tall; lowland and hill forest; Ph, Sl; endemic.

234.15.3 **Johannesteijsmannia magnifica** J. Dransf., **D25** 75; *Teysmannia altifrons auct. non* Rchb.*f*. & Zoll., **FMP5** 31 in part; solitary stemless simple-leaved palm to 5 m tall; lowland forest to 500 m; Sl, NS; endemic.

234.15.4 **Johannesteijsmannia perakensis** J. Dransf., **D25** 73; *Teysmannia altifrons auct. non* Rchb.f. & Zoll., **FMP5** 31 in part; solitary simple-leaved palm to 4 m tall; hill forest; Pk; endemic.

234.16.1 **Korthalsia echinometra** Becc., **FMP5** 68, **D29** 47, **D30** 188; clustering ant-inhabited rattan to 30 m tall; lowland and hill forest; Tg, Ph, Sl, Jh, Sp.

234.16.2 **Korthalsia flagellaris** Miq., **FMP5** 70, **D29** 42, **D30** 180; *Korthalsia rubiginosa* Becc., **FMP5** 70; clustering rattan to 40 m long; peat swamp forest; Tg, Pk, Ph, Sl, NS, Jh.

234.16.3 **Korthalsia hispida** Becc., **D29** 50, **D30** 192; clustering fish-tailed rattan to 30 m tall; swampy lowland forest or near rivers; Ph, Jh.

234.16.4 **Korthalsia laciniosa** (Griff.) Martelli, **D30** 179; *Korthalsia grandis* Ridl., **FMP5** 69, **D29** 40; *Korthalsia wallichiaefolia* (Griff.) H. Wendl., **FMP5** 69; clustering fish-tailed rattan climbing high; lowland and hill forest to 1100 m; Kl, Pn, Pk, Ph, Sl, NS, Jh, Sp.

234.16.5 **Korthalsia lanceolata** J. Dransf., **D29** 45, **D30** 174; clustering high-climbing rattan; lowland and hill forest to 500 m; Pk, Sl; endemic.

234.16.6 **Korthalsia rigida** Blume, **D29** 38, **D30** 172; *Korthalsia polystachya* Martelli, **FMP5** 69; *Korthalsia ferox* Becc. var. *malayana* Becc., **FMP5** 69, **D29** 38; clustering fish-tailed rattan moderately high-climbing; lowlands and mountains to 1100 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

234.16.7 **Korthalsia rostrata** Blume, **D30** 184; *Korthalsia scaphigera* Griff. *ex* Martelli, **FMP5** 68, **D29** 47; ? *Korthalsia machadonis* Ridl., **FMP5** 68; slender fish-tailed ant-inhabited rattan; lowland and hill forest to 800 m; Pk, Ph, Sl, NS, Ml, Jh, Sp.

234.16.8 **Korthalsia scortechinii** Becc., **FMP5** 68, **D29** 50, **D30** 189; clustering ant-inhabited high-climbing rattan; lowland and hill forest to 900 m; Pn, Pk, Ph, Sl, NS, Ml, Sp; endemic.

234.16.9 **Korthalsia tenuissima** Becc., **FMP5** 69, **D29** 42; slender fish-tailed rattan reaching 60 m long; lowland and hill forest to 500 m; Pk, Sl; endemic.

234.17.1 **Licuala acutifida** Martelli, **FMP5** 27 in part, **F23** 44; small fan palm; hill forest; Pn; endemic.

234.17.2 **Licuala confusa** Furtado, **F23** 44; stemless fan palm about 1 m tall; hill forest; Pk; endemic.

234.17.3 **Licuala corneri** Furtado, **F23** 47; solitary fan palm 2–4 m tall; hill forest; known only from Kemaman, Tg; endemic.

234.17.4 **Licuala dransfieldii** Kiew, **K32** 263; fan palm to 3 m tall; hill slopes in lowland forest; Ulu Endau, Jh; endemic.

234.17.5 **Licuala ferruginea** Becc., **FMP5** 26, **F23** 47; short-stemmed or stemless fan palm; lowland forest; Tg, Ph, NS, Jh, Sp.

234.17.6a **Licuala glabra** Griff. var. **glabra**, **FMP5** 26, **F23** 49, **W14** 69; *Licuala longepedunculata* Ridl., **FMP5** 26; stemless or stout-stemmed palm to 3 m tall; forest understorey, lowlands and mountains; Kl, Pk, Ph, Sl, Ml.

234.17.6b **Licuala glabra** Griff. var. **selangorensis** Becc., **FMP5** 26, **F23** 50, **W14** 69; fan palm to 2 m tall; lower montane forest 600–1200 m, lowlands also; Tg, Ph, Sl, Jh; endemic variety.

234.17.7 **Licuala kemamanensis** Furtado, **F23** 50; stemless fan palm barely 1 m tall; known only from Sg Nipa, Tg.

234.17.8 **Licuala kiahii** Furtado, **F23** 52; stemless fan palm barely 1 m tall; known only from Sg Kayu and Gg Pulai, Jh; endemic.

234.17.9 **Licuala kingiana** Becc., **FMP5** 30, **F23** 54; fan palm to about 2 m tall; hill forest; Pk; endemic.

234.17.10 **Licuala kunstleri** Becc., **FMP5** 27, **F23** 54; fan palm to 2 m tall; hill forest; Pk, Ph, Sl.

234.17.11 **Licuala lanuginosa** Ridl., **FMP5** 30, **F23** 54; *Licuala longipes auct. non* Griff., **FMP5** 27 in part; short-stemmed fan palm; hill forest; Jh; endemic.

234.17.12 **Licuala longicalycata** Furtado, **F23** 54; fan palm to 3 m tall; lowland forest; NS, Jh; endemic.

234.17.13 **Licuala longipes** Griff., **FMP5** 27 in part, **F23** 57; stemless fan palm barely 1 m tall; lowland and hill forest; Tg, Ph, NS, Ml.

234.17.14 **Licuala malajana** Becc., **FMP5** 26 in part, **F23** 58; clumping fan palm to 2 m tall; lowland and hill forest; Kl, Tg, Ph, Sl, Jh; endemic.

234.17.15 **Licuala mirabilis** Furtado, **F23** 58; solitary fan palm 3–4 m tall; hill forest; Kd, Pn, Pk; endemic.

234.17.16 **Licuala modesta** Becc., **FMP5** 28, **F23** 60; *Licuala wrayi* Becc. *ex* Ridl., **FMP5** 28; fan palm to 3 m tall; lowland and mountains; Pk; endemic.

234.17.17 **Licuala moyseyi** Furtado, **F23** 61; fan palm; only known from Gg Padang, Tg; endemic.

234.17.18 **Licuala pahangensis** Furtado, **F23** 63; *Licuala malajana auct. non* Becc., **FMP5** 26 in part; fan palm; lowland forest; Ph; endemic.

234.17.19 **Licuala paludosa** Griff., **FMP5** 25 in part, **F23** 65; *Licuala patens* Ridl., **FMP5** 25; *Licuala paniculata* Ridl., **FMP5** 30; clumping fan palm to 6 m tall; lowlands and mountains; Pk, Sl, Jh.

234.17.20 **Licuala pusilla** Becc., **FMP5** 28, **F23** 66; tiny fan palm; hill forest; Kl, Sl, NS, Ml.

234.17.21 **Licuala ridleyana** Becc., **F23** 66; *Licuala malajana auct. non* Becc., **FMP5** 26 in part; fan palm; hill forest; Gg Bujong Malacca, Pk; endemic.

234.17.22 **Licuala scortechinii** Becc., **FMP5** 30, **F23** 67; fan palm; hill forest; Kd, Pk; endemic.

234.17.23 **Licuala spinosa** Wurmb, **FMP5** 25, **F23** 67, **W14** 70; clumping fan palm to 6 m tall; damp open sites; throughout.

234.17.24 **Licuala thoana** L.G. Saw & J. Dransf., **S07** 71; solitary stemless undergrowth palm barely 1 m tall; lowland forest; only known along the Sg Kinchin, Jh; endemic.

234.17.25 **Licuala tiomanensis** Furtado, **F23** 68; fan palm; montane forest; known only from Bt Kajang, P. Tioman; endemic.

234.17.26 **Licuala triphylla** Griff., **FMP5** 28 incl. var. *integrifolia* Ridl., **F23** 68; stemless fan palm barely 1 m tall; lowland and hill forest; Kd, Pk, Ph, Ns, Ml, Jh, Sp.

234.18.1 **Livistona endauensis** J. Dransf. & K.M. Wong, **D38** 121; *Livistona saribus auct. non* (Lour.) Chev., **W14** 72 in part; often gregarious fan palm to 15 m tall; hill forest to 660 m; only known from Ulu Endau area, Jh; endemic.

234.18.2 **Livistona saribus** (Lour.) Merr. *ex* Chev., **K46** 29; *Livistona cochinchinensis* (Blume) Martelli, **FMP5** 22 in part; fan palm to 20 m tall; landward edge of mangrove forest; Sl.

234.18.3 **Livistona speciosa** Kurz, **W14** 73; fan palm to 20 m tall; lower montane forest 600–1000 m; Kd, Kl, Pk, Ph, Sl.

234.18.4 **Livistona tahanensis** Ridl., **FMP5** 23, **W14** 74; fan palm to 8 m tall; montane forest at 1000–1600 m; only known from Gg Tahan; endemic.

234.19.1 **Maxburretia gracilis** (Burret) J. Dransf., **D28** 194, **C16** 69; *Liberbaileya lankawiensis* Furtado, **F24** 238; *Liberbaileya gracilis* (Burret) Burret & Potztal, **W14** 67; clustering fan palm to 3 m tall; in forest on limestone; only known from P. Dayang Bunting, Langkawi; endemic.

234.19.2 **Maxburretia rupicola** (Ridl.) Furtado, **F24** 240, **W14** 76, **D28** 193, **C16** 69; *Livistona rupicola* Ridl., **FMP5** 23; clustering fan palm 1–2 m tall; on limestone hills; only known from Batu Caves, Bt Takun and Anak Bt Takun, Sl; endemic.

234.20.1 **Myrialepis paradoxa** (Kurz) J. Dransf., **D31** 242; *Plectocomiopsis annulata* Ridl., **FMP5** 66; *Plectocomiopsis scortechinii* (Becc.) Ridl., **FMP5** 67; *Myrialepis scortechinii* Becc., **D29** 68; thicket-forming rattan to 40 m long; lowland and hill forest to 1000 m; Tg, Pk, Ph, Sl, NS, Jh, Sp.

234.21.1 **Nenga grandiflora** Fernando, **F06** 66; solitary feather palm to 3 m tall; lowland forest 180–500 m; Jh; endemic.

234.21.2 **Nenga macrocarpa** Scort. *ex* Becc., **FMP5** 12, **W14** 79, **F06** 65; solitary feather palm to 7 m tall; montane forest to 1300 m, sometimes in the lowlands; Kd, Tg, Pk, Ph, Sl, NS.

234.21.3 **Nenga pumila** (Martelli) H. Wendl. var. **pachystachya** (Blume) Fernando, **W14** 79, **F06** 61; *Nenga wendlandiana* Scheff., **FMP5** 12; feather palm to 6 m tall; lowland and hill forest to 1100 m; Kd, Kl, Pk, Ph, Sl, NS, Jh, Sp.

234.22.1 **Nypa fruticans** Wurmb, **FMP5** 71 '*Nipa*', **W14** 81; rhizomatous rosette feather palm to 6 m tall; gregarious in tidal reaches of estuaries; throughout.

234.23.1 **Oncosperma horridum** (Griff.) Scheff., **FMP5** 16, **W14** 82; ferociously spiny, clustered feather palm to 20 m tall; lowland and hill forest to 500 m; throughout.

234.23.2 **Oncosperma tigillarium** (Jack) Ridl., **W14** 83; *Oncosperma filamentosum* Blume, **FMP5** 16; 20-m-tall spiny feather palm growing in many-stemmed clumps; common near the sea; throughout.

234.24.1 **Orania sylvicola** (Griff.) H.E. Moore, **W14** 84; *Orania macrocladus* Martelli, **FMP5** 17; solitary feather palm to 20 m tall; lowland forest to 300 m; throughout.

234.25.1 **Phoenix paludosa** Roxb., **FMP5** 21, **W14** 86; clumping feather palm to 6 m tall; inland edge of mangrove forests; Ps, Kd, Kl, Tg, Pn, Pk.

234.26.1 **Pholidocarpus kingianus** (Becc.) Ridl., **FMP5** 24, **D35** 198; *Livistona kingiana* Becc., **W14** 72; solitary fan palm to 25 m tall; swampy lowland forest; widespread; endemic.

234.26.2 **Pholidocarpus macrocarpus** Becc., **FMP5** 23, **W14** 88; solitary fan palm to 15 m tall; swampy lowland forest; widespread.

234.27.1 **Pinanga acaulis** Ridl., **FMP5** 8; tiny feather palm barely 50 cm tall; lowland forest; Kd, Pk; endemic.

234.27.2 **Pinanga adangensis** Ridl., **FMP5** 10; clumping feather palm to 6 m tall; damp lowland forest; P. Langkawi; endemic.

234.27.3 **Pinanga beccariana** Furtado, **F20** 278; *Pinanga calamifrons auct. non* Becc., **FMP5** 9; stemmed feather palm; hill forest; Gg Jerai, Kd; endemic.

234.27.4 **Pinanga cleistantha** J. Dransf., **D32** 127; clustering feather palm to 2.5 m tall; damp lowland forest; only known from Ulu Setiu F.R., Tg; endemic.

234.27.5 **Pinanga disticha** (Roxb.) Blume *ex* H. Wendl., **FMP5** 7 in part, **W14** 91; clumping generally simple-leaved palm to 1.5 m tall; lowland and montane forest to 1200 m; widespread and common.

234.27.6 **Pinanga fruticans** Ridl., **FMP5** 9; clumping feather palm to 1.5 m tall; lowland forest; north-east; endemic.

234.27.7 **Pinanga limosa** Ridl., **FMP5** 8, **W14** 91; solitary simple or feather palm to 4 m tall; lowland and montane forest to 1200 m; Kl, Tg, Ph, Sl, NS, Ml, Jh, Sp.

234.27.8 **Pinanga malaiana** (Martelli) Scheff., **FMP5** 10, **W14** 91; clumping feather palm occasionally to 6 m tall; lowland and hill forest to 900 m; widespread.

234.27.9 **Pinanga paradoxa** Scheff., **FMP5** 9, **W14** 92; solitary feather palm 1–2 m tall; montane forest, usually 800–1400 m; widespread; endemic.

234.27.10 **Pinanga patula** Blume, **FMP5** 11, **W14** 92; solitary feather palm 2–5 m tall; hill and montane forest, 100–1200 m; widespread.

234.27.11 **Pinanga pectinata** Becc., **FMP5** 10, **W11** 125, **W14** 92; *Pinanga riparia* Ridl., **FMP5** 11; *Pinanga singaporensis* Ridl., **FMP5** 11; tufted feather palm 2–5 m tall; lowland and hill forest to 250 m; Pn, Pk, Ph, Sl, Jh, Sp; endemic.

234.27.12 **Pinanga perakensis** Becc., **FMP5** 10, **W11** 125, **W14** 93; *Pinanga densifolia* Ridl., **FMP5** 6; clumping feather palm to 3 m tall; ridges in lower montane forest, 900–1300 m; widespread; endemic.

234.27.13 **Pinanga polymorpha** Becc., **FMP5** 6 in part, **W11** 126, **W14** 93; *Pinanga brewsteriana* Ridl., **FMP5** 9; *Pinanga glaucescens* Ridl., **FMP5** 6; thicket-forming feather palm 1–3 m tall; gregarious in damp montane forest above 500 m; widespread; endemic.

234.27.14 **Pinanga scortechinii** Becc., **FMP5** 5, **W14** 93; usually solitary feather palm to 5 m tall; lowland and montane forest to 900 m; widespread; endemic.

234.27.15 **Pinanga simplicifrons** (Miq.) Becc., **W14** 93; *Pinanga subruminata auct. non* Becc., **FMP5** 8 in part; simple-leaved carpet-forming palm rarely more than 1 m tall; wet lowland forest; east of Main Range.

234.27.16 **Pinanga subintegra** Ridl., **FMP5** 8, **W14** 94; solitary feather palm 1–2 m tall; montane forest at 800–1400 m; Kd, Kl, Tg, Pk, Ph; endemic.

234.27.17 **Pinanga subruminata** Becc., **FMP5** 8 in part, **W14** 94; simple-leaved palm to 1.5 m tall; hill forest; Tg, Pn, Pk; endemic.

234.27.18 **Pinanga wrayi** Furtado, **F20** 276; *Pinanga polymorpha auct. non* Becc., **FMP5** 6 in part; *Pinanga disticha auct. non* (Roxb.) Blume *ex* H. Wendl., **FMP5** 7 in part; feather palm to 2.5 m tall; montane forest; Pk, Sl; endemic.

234.27.19 **Pinanga aff. mirabilis**, **K46** 29.

234.28.1 **Plectocomia dransfieldii** Madulid, **M08** 77; *Plectocomia sp.*, **D29** 59; robust solitary rattan to 50 m tall; hill forest; known only from the road to Cameron Highlands, Ph; endemic.

234.28.2 **Plectocomia elongata** Mart. *ex* Blume, **M08** 45; *Plectocomia griffithii* Becc., **FMP5** 70, **D29** 55; massive solitary or clustering rattan to 50 m tall; lowlands and mountains to 2000 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

234.28.3 **Plectocomia muelleri** Blume, **D29** 57, **M08** 55; massive solitary rattan reaching 40 m; swampy lowland forest; Ph, Jh.

234.29.1 **Plectocomiopsis corneri** Furtado, **D29** in part, **D31** 250; clustering rattan to 30 m tall; lowland forest; Kemaman, Tg, and Bt Galing, Ph; endemic.

234.29.2 **Plectocomiopsis geminiflora** (Griff.) Becc., **FMP5** 65, **D29** 61, **D31** 246; thicket-forming rattan to 50 m tall; lowland and hill forest; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh.

234.29.3 **Plectocomiopsis mira** J. Dransf., **D31** 247; *Plectocomiopsis corneri auct. non* Furtado, **D29** 65 in part; clustering rattan climbing high; montane forest; known only from Gg Bubu, Pk.

234.29.4 **Plectocomiopsis wrayi** Becc., **FMP5** 65, **D29** 63, **D31** 252; *Plectocomiopsis dubia* Becc., **FMP5** 66; clustering rattan climbing to 30 m; lowland freshwater swamp forest; Pk, Sl; endemic.

234.30.1 **Pogonotium ursinum** (Becc.) J. Dransf., **D33** 193; *Daemonorops ursina* Becc., **D29** 90; solitary rattan rarely more than 4 m tall; lowland forest; once from Taman Negara, Ph.

234.31.1 **Rhopaloblaste singaporensis** (Becc.) Hook.*f.*, **M56** 88; *Ptychoraphis singaporensis* (Becc.) Becc., **FMP5** 18, **W14** 96; *Ptychoraphis longiflora* Ridl., **FMP5** 18; tufted feather palm to 4 m tall; lowland forest; Pk, Ph, Jh, Sp; endemic.

234.32.1 **Salacca affinis** Griff., **FMP5** 32, **W14** 105; prickly dense rosette-forming feather palm to 3 m tall; wet lowland forest; widespread.

234.32.2 **Salacca flabellata** Furtado, **W14** 107, **M44** 466; stemless palm forming wide low clumps about 1 m tall; damp lowland forest; Tg, ?Jh; endemic.

234.32.3 **Salacca glabrescens** Griff., **FMP5** 33, **W14** 107; stemless feather palm to 5 m tall; damp lowland and hill forest; widespread; endemic.

234.32.4 **Salacca graciliflora** Mogea, **M46** 6; short-stemmed feather palm to 2 m tall; lowland forest understorey at 300 m; Gg Janing, Jh; endemic.

234.32.5 **Salacca minuta** Mogea, **M46** 11; simple-leaved stemless palm about 1 m tall; Gg Janing, Jh; endemic.

234.32.6 **Salacca multiflora** Mogea, **M46** 13; stemless simple-leaved palm about 3 m tall; near streams in lowland forest: Ulu Setiu F.R., Besut. Tg: endemic.

234.32.7 **Salacca wallichiana** Martelli, **FMP5** 33, **M45** 121; *Salacca rumphii* Wall. *ex* Blume, **W14** 107; tufted spiny feather palm to 7 m tall.

235. PANDANACEAE

235.1.1 **Freycinetia angustifolia** Blume, **FMP5** 82, **S42** 197; *Freycinetia malaccensis* Ridl., **FMP5** 81; woody climber: lowland swamp and low hill forest; Pn, Pk, Sl, NS, Ml, Jh, Sp.

235.1.2 **Freycinetia confusa** Ridl., **FMP5** 82, **S42** 203; slender liana: lowland forests: Sl, Jh, Sp; endemic.

235.1.3 **Freycinetia corneri** B.C. Stone, **S42** 198; lowland forest liana; Sl, Jh, Sp.

235.1.4a **Freycinetia imbricata** Blume var. **hispidula** B.C. Stone, **S42** 204; forest climber; lowlands, hills and mountains; Ph, Sl, Jh.

235.1.4b **Freycinetia imbricata** Blume var. **imbricata**, **S42** 203; *Freycinetia kingiana* Ridl., **FMP5** 82; lowland forest climber, sometimes on rocks.

235.1.5 **Freycinetia javanica** Blume, **S42** 195; *Freycinetia lucens* Ridl., **FMP5** 80; *Freycinetia montana* Ridl., **FMP5** 82; woody climber with clasping adventitious roots; humid forest, lowlands to mountains: Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

235.1.6 **Freycinetia kamiana** B.C. Stone, **S42** 205; slender climber; only collected at Bt Lagong, Sl.

235.1.7 **Freycinetia rigidifolia** Hemsl., **S42** 204; *Freycinetia acuminata* Ridl., **FMP5** 82; slender climber; lowland and hill forests; Tg, Pk, Ph, Sl, Jh.

235.1.8a **Freycinetia sumatrana** Hemsl. var. **penangiana** B.C. Stone, **S42** 202; forest liana; Kd, Pn.

235.1.8b **Freycinetia sumatrana** Hemsl. var. **sumatrana**, **S42** 199; *Freycinetia valida* Ridl., **FMP5** 83; forest liana; lowlands and mountains; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

235.2.1 **Pandanus affinis** Kurz, **S45** 13; *Pandanus aurantiacus* Ridl., **FMP5** 81; shrub to 5 m tall; freshwater or brackish swamps; Tg, Ph, Sl, NS, Jh, Sp.

235.2.2 **Pandanus albifrons** B.C. Stone, **S58** 317; sparsely branched shrub to 3.5 m; only known from Pasoh F.R., NS; endemic.

235.2.3 **Pandanus alticola** Holttum & H. St.John, **S45** 57, **C16** 70; shrub; on limestone or epiphytic; Kl, Ph, Sl.

235.2.4 **Pandanus atrocarpus** Griff., **FMP5** 80, **S45** 26; big tree; common in lowland swamps; Tg, Pn, Ph, Sl, Jh, Sp.

235.2.5 **Pandanus calcicola** Holttum & H. St.John, **S40** 136, **C16** 70; shrub to 5 m tall; on limestone; Ps, Sl; endemic.

235.2.6 **Pandanus calvus** B.C. Stone, **S61** 427; rosette-forming shrubs; lowland forest; Sl; endemic.

235.2.7 **Pandanus crinifolius** Martelli, **S55** 14; *Pandanus bidens* Ridl., **FMP5** 75, **S40** 126; short-stemmed clumps about 1 m tall; Kd, Pk, Ph, Sl; endemic.

235.2.8a **Pandanus dubius** Spreng. var. **compressus** (Martelli) Stone, **S55** 90.

235.2.8b **Pandanus dubius** Spreng. var. **dubius**, **S55** 88; erect stout-trunked plants; rocky and sandy shores.

235.2.9 **Pandanus dumetorum** Holttum & H. St.John, **S45** 62; stemless, tufted pandan; Tg, Ph; endemic.

235.2.10 **Pandanus echinodermops** Holttum & H. St.John, **S39** 10; swampy areas; Jh; endemic.

235.2.11 **Pandanus elostigma** Martelli, **FMP5** 79, **S45** 48; stemless pandan; Kl, Pk, Ph, Ml, Jh; endemic.

235.2.12 **Pandanus epiphyticus** Martelli, **S45** 65; massive shrub; usually epiphytic; lowland forests; Ph, Jh.

235.2.13 **Pandanus furcatus** Roxb. var. **penangensis** (Ridl.) B.C. Stone, **S55** 24; *Pandanus penangensis* Ridl., **FMP5** 81, **S40** 128; erect trees to 10 m; hills, including limestone; Ps, Pn, Sl; endemic variety.

235.2.14 **Pandanus glaucophyllus** Ridl., **S45** 42; shrub to 4 m tall; Pk, NS; endemic.

235.2.15 **Pandanus helicopus** Kurz, **S40** 131, **S45** 116; *Pandanus muarensis* Ridl., **FMP5** 77; tall erect aquatic shrub; usually standing in water; Sl, Ph, Jh.

235.2.16 **Pandanus herbaceus** Martelli, **FMP5** 81, **S45** 37; *Pandanus collinus* Ridl., **FMP5** 79 incl. var. *spinulosus* Ridl.; *Pandanus kingianus* Martelli, **FMP5** 79, **S40** 136; *Pandanus spinulosus* (Ridl.) H. St.John, **S40** 136; understorey shrub; lowland and hill forest; Ps, Kd, Kl, Pn, Pk, Jh.

235.2.17 **Pandanus horizontalis** H. St.John, **S43** 200, **S55** 26; lowland forest; Ph.

235.2.18 **Pandanus houllettei** Carrière, **FMP5** 74, **S55** 26; dubiously native; Sp.

235.2.19 **Pandanus humilis** Lour., **S55** 17; *Pandanus perakensis* Ridl., **FMP5** 81; *Pandanus ovatus* Warb., **S40** 136; Ps, Kd, Tg, Pn, Pk, Ph, NS, Ml.

235.2.20 **Pandanus immersus** Ridl., **FMP5** 76, **S55** 29; massive shrub forming dense thickets; often in water; Sl, Ph; endemic.

235.2.21 **Pandanus irregularis** Ridl., **FMP5** 76, **S55** 84, **C16** 71, **S61** 431; erect shrub to 5 m tall; limestone hills; Kl, Ph; endemic.

235.2.22 **Pandanus kaida** Kurz, **S55** 93; Kd, Pn, NS.

235.2.23 **Pandanus kamiae** B.C. Stone, **S43** 201 '*kamii*', **S55** 33; acaulescent or decumbent pandan; freshwater swamp forest; Jh.

235.2.24 **Pandanus kedahensis** H. St.John, **S55** 36; pandan; forest at about 1100 m; only known from G. Jerai, Kd; endemic.

235.2.25 **Pandanus klossii** Ridl., **FMP5** 74, **S55** 68; erect trees with prop roots to 7 m; mountain tops; Kl, Tg, Ph; endemic.

235.2.26 **Pandanus lais** Kurz, **S43** 200, **S55** 42; only collected on P. Tinggi, Jh.

235.2.27 **Pandanus longicaudatus** Holttum & H. St.John, **S55** 44; pandan; hill and montane forest, 1000–1800 m; Pk, Ph, Sl; endemic.

235.2.28a **Pandanus militaris** Parkinson var. **malayanus** B.C. Stone, **S44** 127; erect, sparsely branched shrub 3–4 m tall; in swamps; Kd, Kl, Tg, Jh, Sp.

235.2.28b **Pandanus militaris** Parkinson var. **militaris**, **S44** 125; erect, sparsely branched shrub 3–4 m tall; in swamps; Tg, Sl, ?Sp.

235.2.29 **Pandanus monotheca** Martelli, **FMP5** 79, **S45** 33; *Pandanus ornatus* [*non* Hort. *ex* Bull] (Gaudich.) Kurz, **FMP5** 80; *Pandanus recurvatus* H. St.John, **S40** 136; erect, slender shrub; common in hill forests, 500–1500 m; Kd, Kl, Tg, Pn, Pk, Ph, NS, Jh, Sp.

235.2.30 **Pandanus motleyanus** Solms, **S40** 132, **S44** 130; slender erect shrub to 5 m tall; near forest streams or in swampy forest; once from Jh.

235.2.31 **Pandanus nanus** Martelli, **S45** 49; stemless pandan; Pk, Ph.

235.2.32 **Pandanus odoratissimus** L.*f*., **S39** 3; *Pandanus fascicularis* Lam., **FMP5** 73; large prop-rooted shrub; the common seashore pandan; widespread.

235.2.33 **Pandanus parvus** Ridl., **FMP5** 78, **S45** 39; shrub to 2.5 m tall; lowland forest; Ph, Ml, Jh, Sp.

235.2.34 **Pandanus pentodon** Ridl., **FMP5** 75, **S39** 7; low slender bush; rheophyte; Tg, Jh; endemic.

235.2.35 **Pandanus pilaris** Ridl., **FMP5** 79, **S45** 51; Sl, NS, Jh.

235.2.36 **Pandanus piniformis** Holttum & H. St.John, **S55** 68, **C16** 71; clumping pandan 3–4 m tall; limestone hills; Pulai area of Pk; endemic.

235.2.37 **Pandanus polycephalus** Lam., **S39** 14; slender bushy treelet; beaches; Jh.

235.2.38 **Pandanus prainii** Martelli, **S40** 132, **S44** 138; shrub; Pk, Sl; endemic.

235.2.39 **Pandanus rostratus** Martelli, **S64** 49; *Pandanus corneri* Kaneh., **S39** 14; stems to about 2 m; along streams near the sea; Jh, Sp.

235.2.40 **Pandanus saint-johnii** B.C. Stone, **S45** 63; stemless pandan; hill forest; Jh; endemic.

235.2.41 **Pandanus scortechinii** Martelli, **S40** 132, **S44** 142; shrub 120–130 cm tall; wet swamps; Pk, Jh; endemic.

235.2.42 **Pandanus sobolifer** B.C. Stone, **S45** 63; stemless pandan; hill forest; Pn, Pk; endemic.

235.2.43 **Pandanus stelliger** Ridl., **FMP5** 76, **S55** 81; shrub to 3 m tall; lowlands and mountains; Tg, Pn, Pk, Ph, Sl, Jh.

235.2.44 **Pandanus tetrodon** Ridl., **S55** 83; erect prop-rooted shrub; Sp.

235.2.45 **Pandanus undulifolius** Holttum & H. St.John, **S45** 42; Jh; endemic.

235.2.46 **Pandanus unguiculatus** Ridl., **FMP5** 78, **S45** 41; *Pandanus attenuatus* H. St.John, **S40** 136; understorey shrub; montane forest; Ph, Sl; endemic.

235.2.47 **Pandanus unguifer** Hook.*f*., **S55** 56; *Pandanus bicornis* Ridl., **FMP5** 76; montane forest; Pk, Ph.

235.2.48 **Pandanus yvanii** Solms, **S40** 132, **S45** 133; tall prickly shrub 5–6 m tall; common along water courses in shady forest; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

236. PHILYDRACEAE

236.1.1 **Philydrum lanuginosum** Banks *ex* Gaertn., **FMP4** 347, **FMı4** 5; tufted herb to 1 m tall; in shallow water, rice-fields; widespread.

237. PHORMIACEAE

237.1.1 **Dianella ensifolia** (L.) DC., **FMP4** 329, **FMı9** 207; *Dianella parviflora* Ridl., **FMP4** 330; tufted herb to 1 m tall; sea shores and open forest to 1000 m; throughout.

237.1.2 **Dianella javanica** (Blume) Kunth, **FMı9** 209; *Rhuacophila javanica* Blume, **FMP4** 328; herb to 2 m tall; rocky places on mountain tops; Pk, Ph.

238. PONTEDERIACEAE

238.1.1 **Eichhornia crassipes** (Mart.) Solms, **FMi4** 259, **M47** 484; floating herb 30–50 cm tall; forming mats on water bodies; naturalized from tropical America; throughout.

238.2.1 **Monochoria elata** Ridl., **FMP4** 344, **C23** 167; *Monochoria hastata* (L.) Solms var. *elata* (Ridl.) Backer, **FMi4** 258; herb to 150 cm tall; wet rice-fields; Kd.

238.2.2 **Monochoria hastata** (L.) Solms, **FMi4** 258, **C23** 164; *Monochoria hastaefolia* Presl, *nom. illeg.*, **FMP4** 344; rhizomatous herb to 125 cm tall; margins of ditches, lakes and rivers; widespread.

238.2.3 **Monochoria vaginalis** (Burm.*f.*) Kunth, **FMP4** 346 incl. var. *plantaginea* (Roxb.) Solms, **FMi4** 256, **C23** 161; rhizomatous herb; common in damp or wet places; throughout.

239. POTOMAGETONACEAE

239.1.1 **Ruppia maritima** L., **FMP4** 367; creeping submerged aquatic herb; wet rice-fields; Pn.

240. RESTIONACEAE

240.1.1 **Leptocarpus disjunctus** Mast., **FMP5** 136, **FMi5** 419; rhizomatous sedge-like herb to 1 m tall; sandy places, often near the sea; Tg.

241. SMILACACEAE

241.1.1 **Heterosmilax borneensis** A. DC., **K69** 203; *Heterosmilax indica auct. non* A. DC., **FMP4** 344; slender vine to 3 m long; thickets near the sea; once at Tanjong Katong, Sp.

241.2.1 **Smilax blumei** A. DC., **FMP4** 343, **K66** 10, **K67** 230; large climber to 10 m long; lowland and hill forest; Ph, Sl.

241.2.2 **Smilax calophylla** Wall. *ex* A. DC., **FMP4** 330, **K67** 239; slender straggling shrub 60–230 cm tall; lowland and hill forest; widespread.

241.2.3 **Smilax corbularia** Kunth var. **woodii** (Merr.) T. Koyama; **K66** 15; *Smilax peguana A.* DC., **FMP4** 340; rocks on mountains; Ph, Sp.

241.2.4 **Smilax extensa** Wall. *ex* A. DC., **FMP4** 341, **K67** 224; climber; hill forests; Pn.

241.2.5 **Smilax kingii** Hook.*f*., **FMP4** 343, **K66** 22; thick woody climber; hill forest; Pk.

241.2.6 **Smilax lanceifolia** Roxb., **K67** 225; *Smilax laevis* Wall. *ex* A. DC., **FMP4** 340; climber to 5 m long; montane forest; widespread.

241.2.7 **Smilax leucophylla** Blume, **FMP4** 343, **K66** 27; woody climber; lowland and montane forest; Pn, Pk, Ph, Jh, Sp.

241.2.8 **Smilax luzonensis** Presl, **K67** 222; *Smilax helferi A*. DC., **FMP4** 342; climber to 5 m long; climbing on bushes in open country; Kd, Kl, Pk, Ph, Sl, NS, Ml.

241.2.9 **Smilax megacarpa** A. DC. & C. DC., **FMP4** 341, **K67** 217; climber 2–6 m long; lowland forests; Pn, Pk, Ph.

241.2.10 **Smilax myosotiflora** A. DC., **FMP4** 340, **K67** 243; slender vine; lowland forest; Pn, Kl, Pk, Ph, NS, Ml, Jh, Sp.

241.2.11 **Smilax odoratissima** Blume, **FMP4** 342; sparsely thorny climber; montane forests; Pk, Sl.

241.2.12 **Smilax polyacantha** Wall. *ex* Kunth, **FMP4** 342, **K67** 224; slender thorny climber; hill and montane forests; several localities; endemic.

241.2.13 **Smilax setosa** Miq., **K66** 45; *Smilax bracteata* Presl var. *barbata* (Wall. *ex* A. DC.) T. Koyama *nomen*; **T18** 214; *Smilax barbata* Wall. *ex* A. DC., **FMP4** 342; large-leaved thorny liana; lowland forest margins; widespread.

241.2.14 **Smilax sinclairi** T. Koyama; **K66** 48; climber; lowland forest; Pk, NS; endemic.

242. STEMONACEAE

242.1.1 **Stemona curtisii** Hook.*f*., **FMı11** 403; *Stemona tuberosa auct. non* Lour., **FMP4** 320; vine to 3 m long; thickets near the sea, sometimes on limestone; widespread.

242.2.1 **Stichoneuron caudatum** Ridl., **FMP4** 321, **FMı11** 408; slender erect herb to 60 cm tall; wet places in lowland forest; Kl, Pk.

243. TACCACEAE

243.1.1 **Tacca chantrieri** André, **FMı7** 813; *Tacca minor* Ridl., **FMP4** 311; herb to 60 cm tall; lowland and hill forest; Ps, Pn, Pk.

243.1.2 **Tacca integrifolia** Ker Gawl., **FMı7** 811; *Tacca cristata* Jack, **FMP4** 310; herb to 1 m tall; lowland and hill forest; widespread.

243.1.3 **Tacca leontopetaloides** (L.) Kuntze, **FMi7** 809; *Tacca pinnatifida* J.R. Forst. & G. Forst., **FMP4** 309; *Tacca chantrieri auct. non* André, **FMP4** 311; tuberous herb to nearly 2 m tall; sandy places near the sea; widespread but not common.

243.1.4 **Tacca palmata** Blume, **FMP4** 309, **FMi7** 814; tuberous palmate-leaved herb to 80 cm tall; forest margins to 1000 m; Kl, Pn, P. Tioman, Jh.

244. TRICHOPODACEAE

244.1.1 **Trichopus zeylanicus** Gaertn. ssp. **travancoricus** (Bedd.) Burkill, **FMi4** 299; *Trichopus malayanus* Ridl., **FMP4** 312; tufted herb to about 30 cm tall; seasonally-flooded lowland forest; Kl, Ph.

245. TRIURIDACEAE

245.1.1 **Sciaphila maculata** Miers, **FMi10** 113; *Sciaphila affinis* Becc., **FMP4** 364; erect red saprophytic herb 3–16 cm tall; on leaf litter in lowland and hill forest to 1000 m; widespread.

245.1.2 **Sciaphila nana** Blume, **FMi10** 117; erect purple saprophytic herb 5–15 cm tall; dense hill forest 250–500 m; Pk, Ph.

245.1.3 **Sciaphila secundiflora** Thwaites *ex* Benth., **FMi10** 116; *Sciaphila major* Becc., **FMP4** 364; *Sciaphila asterias* Ridl., **FMP4** 365; erect red saprophytic herb 6-33 cm tall; in damp rocky forest, lowland and hills and on limestone; widespread.

245.1.4 **Sciaphila tenella** Blume, **FMi10** 113; erect red saprophytic herb 5–24 cm tall; lowland and hill forest; Ph, Jh, Sp.

246. TYPHACEAE

246.1.1 **Typha angustifolia** L., **FMi4** 243; tufted herb to 3 m tall; in shallow water; widespread; naturalized.

If *Typha angustifolia* is accepted in a narrower sense as a temperate species then the correct name for the Malayan plant is probably *Typha domingensis* Pers. [**C36** 365].

247. XYRIDACEAE

247.1.1 **Xyris bancana** Miq., **FMP4** 349, **FMi4** 370 incl. var. *lacerata* Malme, **H08** 133, **FMi9** 571; *Xyris ridleyi* Rendle, **FMP4** 349, **FMi4** 370; tufted sedge-like herb to 30 cm tall; open sandy places in the lowlands and mountains; Ph, Ml.

247.1.2 **Xyris capensis** Thunb., **FMi4** 374 incl. var. *schoenoides* (Mart.) Nilsson, **H08** 135, **FMi9** 573; tufted herb approaching 1 m tall; once from the Cameron Highlands, Ph.

247.1.3 **Xyris complanata** R.Br., **FMi4** 369, **H08** 133, **FMi9** 571; *Xyris anceps* (*non* Lam.) Vahl, **FMP4** 348; tufted sedge-like herb to 60 cm tall; open sandy places; widespread, common along east coast.

247.1.4 **Xyris grandis** Ridl., **FMP4** 347, **FMi4** 372, **H08** 135, **FMi9** 572; tufted herb to 90 cm tall; wet places in the mountains at 900–2200 m; Main Range.

247.1.5 **Xyris indica** L., **FMP4** 348, **FMi4** 373, **H08** 134, **FMi9** 372; tufted herb to 80 cm tall; weed of wet rice; Ml northward.

247.1.6 **Xyris pauciflora** Willd., **FMP4** 348, **FMi4** 371, **H08** 136, **FMi9** 573; tufted sedge-like herb to 40 cm tall; damp sandy places; widespread.

247.1.7 **Xyris wallichii** Kunth, **H08** 136, **FMi9** 573; *Xyris oreophila* Ridl., **FMP4** 349, **FMi4** 372; *Xyris malmei* P. Royen, **FMi4** 370; tufted sedge-like herb to 45 cm tall; known only from Gg Jerai, Kd at 850–1300 m.

248. ZINGIBERACEAE

248.1.1 **Alpinia aquatica** (Retz.) Roscoe, **S34** 37; *Alpinia melanocarpa* (Teijsm. & Binn.) Ridl., **FMP4** 279; *Languas melanocarpa* (Teijsm. & Binn.) Burkill, **H41** 159; herb to 2 m tall; locally common near the sea; south and east of the Peninsula.

248.1.2 **Alpinia assimilis** Ridl., **FMP4** 280, **S34** 38; *Catimbium assimile* (Ridl.) Holttum, **H41** 152; herb to 2 m tall; known only from type; near Pekan, Ph; endemic.

248.1.3 **Alpinia capitellata** Jack, **FMP4** 283, **H41** 143, **S34** 40; herb 2–3 m tall; Pn, Pk.

248.1.4 **Alpinia conchigera** Griff., **FMP4** 278, **H41** 142, **S34** 41; herb to 120 cm tall; damp open places; widespread.

248.1.5 **Alpinia corneri** (Holttum) R.M. Sm., **S34** 65; *Cenolophon corneri* Holttum, **H41** 139; herb to 1.5 m tall; wet lowland forest, 150 m; only known from type; Bt Kajang, Tg; endemic.

248.1.6 **Alpinia denticulata** (Ridl.) Holttum, **H41** 143, **S34** 43; *Odontychium denticulatum* (Ridl.) K. Schum., **FMP4** 243; herb to 60 cm tall; hill forest; only known from near Lumut, Pk; endemic.

248.1.7 **Alpinia galanga** (L.) Sw., **FMP4** 279, **S34**: *Langnas galanga* (L.) Stuntz, **H41** 157; tufted herb to 2 m tall or more; areas abandoned after cultivation; widespread; not native, escaped from cultivation.

248.1.8a **Alpinia javanica** Blume var. **javanica**, **FMP4** 283, **H41** 145; *Alpinia campanaria* Ridl., **FMP4** 283; herb to 3 m tall; open places in lowland forest; widespread.

248.1.8b **Alpinia javanica** Blume var. **colorata** Ridl., **FMP4** 283, **H41** 146; herb to 3 m tall; open places in lowland forest; Kinta Valley, Pk; endemic variety.

248.1.9 **Alpinia latilabris** Ridl., **FMP4** 282, **S34** 48; *Catimbium latilabre* (Ridl.) Holttum, **H41** 153; herb to 3 m tall; lowland forest; Ph; endemic.

248.1.10 **Alpinia macrostephana** (Baker) Ridl., **FMP4** 284, **S34** 50; *Cenolophon macrostephanum* (Baker) Holttum, **H41** 135; herb to 3 m tall; hill forest; 120–240 m; only known from Larut, Pk; endemic.

248.1.11 **Alpinia malaccensis** (Burm.) Roscoe var. **nobilis** (Ridl.) I.M. Turner; **T24** 223; *Alpinia nobilis* Ridl., **FMP4** 282; *Catimbium malaccense* (Burm.) Holttum var. *nobilis* (Ridl.) Holttum, **H39** 155; herb to 4 m tall; lowland forest; Ph, Sl.

248.1.12 **Alpinia mollissima** Ridl., **FMP5** 339, **S34** 51; *Cenolophon mollissimum* (Ridl.) Holttum, **H41** 138; herb to 120 cm tall; montane forest; Ph, Jh; endemic.

248.1.13 **Alpinia murdochii** Ridl., **FMP4** 280, **H41** 148, **S34** 51; herb to 1.5 m tall; montane forest about 1500 m; Ph, Sl; endemic.

248.1.14 **Alpinia mutica** Roxb., **FMP4** 279, **S34** 51; *Catimbium muticum* (Roxb.) Holttum, **H41** 150; herb to 2 m; open damp places; Kd, Pn, Pk, Ph, Jh, Sp.

248.1.15 **Alpinia nutans** (L.) Roscoe, **S34** 52; *Catimbium speciosum* (J.C. Wendl.) Holttum, **H41** 152; herb to 2 m tall; Ps, Kl.

248.1.16 **Alpinia oxymitra** K. Schum., **S34** 53; *Alpinia comosa* (*non* Jacq.) Ridl., **FMP4** 285; *Cenolophon oxymitrum* (K. Schum.) Holttum, **H41** 134; herb to 3 m tall; lowland and hill forest; Kd, Kl.

248.1.17 **Alpinia pahangensis** Ridl., **FMP4** 282, **H41** 146, **S34** 53; *Alpinia burkillii* M.R. Hend., **H34** 55; herb 2–3 m tall; lowland forest; Tg, Ph, NS, Jh; endemic.

248.1.18 **Alpinia petiolata** Baker, **FMP4** 284, **S34** 54; *Cenolophon petiolatum* (Baker) Holttum, **H41** 136; herb to 1.5 m tall; montane forests above 700 m; Pk, Ph, Sl, NS; endemic.

248.1.19 **Alpinia pulcherrima** Ridl., **FMP4** 284, **S34** 55; *Cenolophon pulcherrimum* (Ridl.) Holttum, **H41** 136; herb to 1.5 m tall; montane rain forest; Cameron Highlands, Ph; endemic.

248.1.20a **Alpinia rafflesiana** Wall. *ex* Baker var. **rafflesiana**, **FMP4** 281, **H41** 144; *Alpinia aurantiaca* Ridl., **FMP4** 282; herb to 1.5 m tall; lowland and hill forest to 1200 m; common, widespread.

248.1.20b **Alpinia rafflesiana** Wall. *ex* Baker var. **hirtior** (Ridl.) Holttum, **H41** 145; *Alpinia aurantiaca* var. *hirtior* Ridl., **FMP4** 282; herb to 2 m tall; montane forest above 1200 m; Kd, Kl, Pk; endemic variety.

248.1.21 **Alpinia scabra** (Blume) Baker, **FMP4** 279, **S34** 57; *Languas scabra* (Blume) Burkill, **H41** 158; herb to 3 m tall; lowlands and hills; commonest at 300–900 m; widespread.

248.1.22 **Alpinia seimundii** Ridl., **FMP4** 280, **H41** 149, **S34** 57; montane forest herb; Ph; endemic.

248.1.23a **Alpinia vitellina** (Lindl.) Ridl. var. **cannaefolia** (Ridl.) I.M. Turner, **T24** 223; *Alpinia cannaefolia* Ridl., **FMP4** 285; *Cenolophon vitellinum* (Lindl.) Horan. var. *cannaefolium* (Ridl.) Holttum; **H41** 138; herb to 1.2 m tall; lowland and hill forest; Pn, Sl, NS.

248.1.23b **Alpinia vitellina** (Lindl.) Ridl. var. **vitellina**, **FMP4** 284; *Cenolophon vitellinum* (Lindl.) Horan., **H41** 137; herb to 1.2 m tall; lowland and hill forest; Pn, Sl, Jh.

248.2.1 **Amomum aculeatum** Roxb., **H41** 212; *Amomum flavum* Ridl., **FMP4** 283; *Amomum aurantiacum* Ridl., **FMP4** 262; herb to 4 m tall; lowland forest; Pn.

248.2.2 **Amomum biflorum** Jack, **H41** 199; *Elettariopsis pubescens* Ridl., **FMP4** 275; herb to 1 m tall; lowland forest; Kd, Pn, Ph, Ml.

248.2.3 **Amomum cephalotes** Ridl., **FMP4** 264, **H41** 209; herb to about 2 m tall; damp lowland forest; Ph, Jh; endemic.

248.2.4 **Amomum citrinum** (Ridl.) Holttum, **H41** 207; *Conamomum citrinum* Ridl., **FMP4** 255; *Amomum cylindrostachys* Ridl., **FMP4** 265; stilt-rooted herb 3–4 m tall; montane forest; Pk, Sl; endemic.

248.2.5 **Amomum cylindraceum** Ridl., **FMP4** 265, **H41** 204; herb to 2 m tall; lowland forest; known only from type; Telok Sera, Dindings, Pk; endemic.

248.2.6 **Amomum hastilabium** Ridl., **FMP4** 266, **H41** 203; *Amomum holttunii* Ridl., **FMP4** 264; *Amomum xanthoglossum* Ridl., **FMP4** 263; herb to 2.5 m tall; lowland and hill forest; Kl, Pk, Ph, Sl, NS, Jh, Sp; ? endemic.

248.2.7 **Amomum lappaceum** Ridl., **FMP4** 263, **H41** 210; *Amomum perakense* Ridl., **FMP4** 266; stilt-rooted herb to about 3 m tall; montane forest at 750–1500 m; Pk, Ph, Sl; endemic.

248.2.8 **Amomum macrodous** Scort., **FMP4** 266 '*macrodons*', **H41** 202; herb to 60 cm tall; lowland forest; poorly known; Pk; endemic.

248.2.9 **Amomum macroglossum** K. Schum., **H41** 200; stilt-rooted herb to 60 cm tall; montane forest at 900 m; Gg Padang, Tg.

248.2.10 **Amomum micranthum** Ridl., **FMP4** 267, **H41** 201; herb to 1 m tall; hill forest; Pn, Pk, Sl, NS; endemic.

248.2.11 **Amomum ochreum** Ridl., **FMP4** 264, **H41** 208; herb to nearly 5 m tall; hill forest at 700–1100 m; Kd, Ph, Sl, NS; endemic.

248.2.12 **Amomum rivale** Ridl., **FMP5** 338, **H41** 205; herb; known only from type; gorge of the Tras, near Raub, Ph; endemic.

248.2.13 **Amomum spiceum** Ridl., **FMP4** 263, **H41** 197; herb about 2 m tall; montane forest at about 750 m; NS, P. Tioman; endemic.

248.2.14 **Amomum squarrosum** Ridl., **FMP4** 265, **H41** 206; stilt-rooted herb to 4 m tall; lowland forest; Tg, Pk, Ml; endemic.

248.2.15 **Amomum testaceum** Ridl., **FMP4** 266, **H41** 205, **C16** 73; herb to 3 m tall; lowland forest, often on limestone; widespread, mostly in the north.

248.2.16 **Amomum uliginosum** J. König, **FMP4** 264, **H41** 213; herb to 3 m tall; lowland forest; Kd, Kl, Pn, Ph, Sl, Ml, Jh.

248.2.17 **Amomum utriculosum** (Ridl.) Holttum, **H41** 208; *Conamomum utriculosum* Ridl., **FMP4** 255; stilt-rooted herb to 2.5 m tall; montane forest at 1000–1200 m; Pk, Ph; endemic.

248.2.18 **Amomum xanthophlebium** Baker, **FMP4** 262, **H41** 198; herb to 5 m tall; lowland and montane forest to 1200 m; Pk, Ph, Sl, NS, Ml, Jh, Sp; endemic.

248.3.1 **Boesenbergia clivalis** (Ridl.) Schltr., **H41** 116; *Gastrochilus clivalis* Ridl., **FMP4** 249; *Gastrochilus puberulus* Ridl., **FMP4** 251; herb about 50 cm tall; lowland forest; Pk, Ph, Sl, Jh; endemic.

248.3.2 **Boesenbergia curtisii** (Baker) Schltr., **H41** 112, **C16** 73; *Gastrochilus curtisii* Baker, **FMP4** 249; *Gastrochilus acuta* Ridl., **FMP4** 249; herb to about 50 cm tall; forest on limestone; Ps, P. Langkawi, Ph.

248.3.3 **Boesenbergia flava** (Ridl.) Holttum, **H41** 113; *Gastrochilus flava* Ridl., **FMP4** 248; 4-leaved herb to about 30 cm tall; lowland forest; Pk; endemic.

248.3.4 **Boesenbergia longipes** (King & Prain *ex* Ridl.) Schltr., **H41** 114; *Gastrochilus longipes* King & Prain *ex* Ridl., **FMP4** 250; herb to 30 cm tall with 2 or 3 leaves; lowland forest; poorly known; Pk; endemic.

248.3.5a **Boesenbergia plicata** (Ridl.) Holttum var. **lurida** (Ridl.) Holttum, **H41** 110; *Gastrochilus luridus* Ridl., **FMP4** 248; tufted herb; only known from P. Langkawi.

248.3.5b **Boesenbergia plicata** (Ridl.) Holttum var. **plicata**, **H41** 109; *Gastrochilus plicatus* Ridl., **FMP4** 247; tufted herb about 40 cm tall; lowland forest to 800 m; Kl, Tg, Pk, Ph, Jh; endemic species.

248.3.6 **Boesenbergia prainiana** (Baker) Schltr., **H41** 111; *Gastrochilus prainiana* (Baker) Ridl., **FMP4** 248; *Gastrochilus albosanguineus* Ridl., **FMP4** 247; few-leaved herb to about 30 cm tall; lowland forest; Tg, Pk, Ph, Jh.

248.3.7 **Boesenbergia pulcherrima** (Wall.) Kuntze, **H41** 109; *Gastrochilus pucherrima* Wall., **FMP4** 247; herb; collected once from Penang Hill.

248.3.8 **Boesenbergia rotundata** (L.) Mansf., **N11** 315; *Gastrochilus panduratus* (Roxb.) Ridl., **FMP4** 249; *Boesenbergia pandurata* (Roxb.) Schltr., **H41** 115; small herb; Pn, Pk; doubtfully wild, oft cultivated.

248.4.1 **Camptandra latifolia** Ridl., **FMP4** 243, **H41** 81; tufted herb to about 50 cm tall; montane forest at 900–1500 m; Pk, Ph; common at Cameron Highlands; endemic.

248.4.2 **Camptandra ovata** Ridl., **FMP4** 244, **H41** 81; *Camptandra tahanensis* Ridl., **FMP4** 244; herb about 20 cm tall; montane forest at 1200–2100 m; Sl, Ph; endemic.

248.4.3 **Camptandra parvula** (King *ex* Baker) Ridl., **FMP4** 243, **H41** 80; tufted herb about 15 cm tall; lowland and hill forest to 900 m, often on wet rocks; widespread.

248.5.1 **Curcuma aurantiaca** Zijp, **H41** 67; herb to 30 cm tall; collected once in a banana plantation; Besih Hangat, Ps.

248.5.2 **Curcuma parviflora** Wall., **H41** 68; few-leaved herb about 30 cm tall; collected once; Ps.

248.5.3 **Curcuma zeodaria** (Christm.) Roscoe, **FMP4** 254, **H41** 71; herb to about 1 m tall; waste ground.

248.6.1 **Elettaria longituba** (Ridl.) Holttum, **H41** 238; *Elettariopsis longituba* Ridl., **FMP4** 275; herb to about 3 m tall; lowland and hill forest; Tg, Pk, Ph, Sl; endemic.

248.7.1 **Elettariopsis burttiana** Y.K. Kam, **K01** 144; creeping herb to 50 cm tall; lowland forest; once from Pk; endemic.

248.7.2 **Elettariopsis curtisii** Baker, **FMP4** 274, **H41** 217, **K01** 142; *Elettariopsis latiflora* Ridl., **FMP4** 274; herb about 40 cm tall; lowland and hill forest to 900 m; Tg, Pn, Pk, Jh, Sp; endemic.

248.7.3 **Elettariopsis exserta** (Scort.) Baker, **FMP4** 274, **H41** 217, **K01** 141; herb; once collected in Pk; poorly known.

248.7.4a **Elettariopsis smithiae** Y.K. Kam var. **rugosa** Y.K. Kam, **K01** 150; creeping herb to 70 cm tall; lowland and hill forest; Sl; endemic.

248.7.4b **Elettariopsis smithiae** Y.K. Kam var. **smithiae**, **K01** 148; creeping herb to 70 cm tall; lowland and hill forest; Kd, Pk, Sl, NS, Jh; endemic.

248.7.5 **Elettariopsis triloba** (Gagnep.) Loes., **H41** 219, **K01** 146; herb to about 50 cm tall; mostly in the hills at 250–500 m; Ps, Kd, Pn, Pk, Ph, Sl, NS, Jh.

248.8.1 **Etlingera elatior** (Jack) R.M. Sm., **S33** 244; *Phaeomeria imperialis* Lindl., **FMP4** 272; *Phaeomeria speciosa* (Blume) Merr., **H41** 181; kantan, torch ginger; herb to 5 m tall; often cultivated, probably wild in lowland forests; widespread.

248.8.2 **Etlingera hemisphaerica** (Blume) R.M. Sm., **S33** 245; *Phaeomeria fulgens* (Ridl.) K. Schum., **FMP4** 272, **H41** 180; herb to 5 m tall; hill forest; Tg, Pk; endemic.

248.8.3 **Etlingera littoralis** (J. König) Giseke, **S33** 252; *Hornstedtia megalocheilos* (Griff.) Ridl., **FMP4** 270; *Achasma megalocheilos* Griff., **H41** 191; herb 3–6 m tall; common in damp lowland forests; throughout Peninsula.

248.8.4a **Etlingera maingayi** (Baker) R.M. Sm. var. **longibracteata** (Holttum) I.M. Turner, **T24** 223; *Phaeomeria maingayi* (Baker) K. Schum. var. *longibracteata* Holttum, **H41** 180; creeping, sometimes walking, herb to 3 m tall; lowland forest; Ph.

218.8.4b **Etlingera maingayi** (Baker) R.M. Sm. var. **maingayi**, **S33** 247; *Phaeomeria maingayi* (Baker) K. Schum., **FMP4** 272, **H41** 180; creeping, sometimes walking, herb to 3 m tall; lowland forest; widespread.

248.8.5a **Etlingera metriocheilos** (Griff.) R.M. Sm. var. **grandiflora** (Holttum) I.M. Turner, **T24** 223; *Achasma sphaerocephalum* (Baker) Holttum var. *grandiflora* Holttum, **H41** 191; herb; lowland and hill forest.

248.8.5b **Etlingera metriocheilos** (Griff.) R.M. Sm. var. **major** (Holttum) I.M. Turner, **T24** 223; *Achasma sphaerocephalum* (Baker) Holttum var. *majus* Holttum, **H41** 190; herb; lowland and hill forest.

248.8.5c **Etlingera metriocheilos** (Griff.) R.M. Sm. var. **metriocheilos**, **S33** 247; *Hornstedtia albomarginata* Ridl., **FMP4** 269; *Achasma sphaerocephalum* (Baker) Holttum, **H41** 189; herb to 4m tall; lowland and hill forest; widespread.

248.8.5d **Etlingera metriocheilos** (Griff.) R.M. Sm. var. **petiolata** (Holttum) I.M. Turner, **T24** 223; *Achasma sphaerocephalum* (Baker) Holttum var. *petiolatum* Holttum, **H41** 191; herb; lowland and hill forest.

248.8.5e **Etlingera metriocheilos** (Griff.) R.M. Sm. var. **rubrostriata** (Holttum) I.M. Turner, **T24** 223 *Achasma sphaerocephalum* (Baker) Holttum var. *rubrostriatum* Holttum, **H41** 191; herb; lowland and hill forest.

248.8.6 **Etlingera pauciflora** (Ridl.) R.M. Sm., **S33** 248; *Hornstedtia pauciflora* Ridl., **FMP4** 270; *Achasma pauciflora* (Ridl.) Holttum, **H41** 187; herb to 4 m tall; forests, sometimes on limestone; Tg, Sl, Jh; endemic.

248.8.7 **Etlingera punicea** (Roxb.) R.M. Sm., **S33** 249; *Hornstedtia macrocheilos* (Griff.) Ridl., **FMP4** 271; *Hornstedtia metriocheilos sensu* Ridl., **FMP4** 271; *Achasma macrocheilos* Griff., **H41** 188; herb 2–4 m high; common at forest edges and near forest streams in lowlands; throughout Malaya.

248.8.8 **Etlingera subterranea** (Holttum) R.M. Sm., **S33** 250; *Achasma subterraneum* Holttum, **H41** 187; herb to 3 m tall; montane rain forest about 1500 m; Cameron Highlands, Ph; endemic.

248.8.9 **Etlingera triorgyalis** (Baker) R.M. Sm., **S33** 250; *Hornstedtia triorgyalis* (Baker) Ridl., **FMP4** 269; *Achasma triorgyale* (Baker) Holttum, **H41** 186; herb to 5 m or more tall; lowland forest, sometimes on limestone; Pk, Sl; endemic.

248.8.10 **Etlingera venusta** (Ridl.) R.M. Sm., **S33** 250; *Phaeomeria venusta* (Ridl.) K.Schum., **FMP4** 272, **H41** 182; herb to 4 m tall; lowland and hill forest; Tg, Pk, Sl, Jh.

248.9.1 **Geocharis aurantiaca** Ridl., **FMP4** 273, **H41** 222; herb to 2 m tall; freshwater swamp forest; Jh.

248.9.2 **Geocharis secundiflora** (Ridl.) Holttum, **H41** 223; *Alpinia secundiflora* Ridl., **FMP4** 278; herb to 2 m tall; hill forest at about 600 m; Kl, Sl, NS; endemic.

248.10.1 **Geostachys decurvata** (Baker) Ridl., **FMP4** 276, **H41** 234; herb to 1.5 m tall; montane forest at 900–1200 m; Pk; endemic.

248.10.2 **Geostachys densiflora** Ridl., **FMP4** 276, **H41** 234; tufted stilt-rooted herb to 1 m tall; montane forest at 1200–1500 m; Pk, Ph; endemic.

248.10.3 **Geostachys elegans** Ridl., **FMP4** 277, **H41** 227; tufted stilt-rooted herb to 1.5 m tall; montane forest at 1100–2100 m; Ph, Ml; endemic.

248.10.4 **Geostachys leucantha** B.C. Stone, **S50** 77; stilt-rooted herb to 3 m tall; upper montane forest at 1750 m; summit of Gg Ulu Kali, Ph; endemic.

248.10.5 **Geostachys megaphylla** Holttum, **H41** 228; herb to 3 m tall; montane forest; only known from type; Gg Batu Brinchang, Ph; endemic.

248.10.6 **Geostachys montana** (Ridl.) Holttum, **H41** 229; *Carenophila montana* Ridl., **FMP4** 256; herb to 1.5 m tall; montane forest; known only from type; summit of Gg Berembun, Ph; endemic.

248.10.7 **Geostachys penangensis** Ridl., **FMP4** 276, **H41** 231; herb to about 60 cm tall; hill forest usually about 600 m; Pn, Ph.

248.10.8 **Geostachys primulina** Ridl., **FMP4** 277, **H41** 233; herb; montane forest; known only from type; Semangkok Pass, Sl; endemic.

248.10.9 **Geostachys rupestris** Ridl., **FMP4** 276, **H41** 231; stilt-rooted herb about 1 m tall; montane forest at 900–1200 m; only known from Gg Jerai, Kd; endemic.

248.10.10 **Geostachys secunda** (Baker) Ridl., **FMP4** 276, **H41** 233; herb about 50 cm tall; rocky places in the mountains; Pk; endemic.

248.10.11 **Geostachys sericea** (Ridl.) Holttum, **H41** 229; *Conamomum sericeum* Ridl., **FMP4** 255; stilt-rooted herb to 2 m tall; montane forest at above 1500 m; only known from Gg Tahan, Ph; endemic.

248.10.12 **Geostachys tahanensis** Holttum, **H41** 232; herb about 50 cm tall; montane forest at about 1000 m; only known from Gg Tahan, Ph; endemic.

248.10.13 **Geostachys taipingensis** Holttum, **H41** 230; herb; hill forest; only known from Taiping Hills, Pk; endemic.

248.11.1a **Globba albiflora** Ridl. var. **albiflora**, **FMP4** 237, **H41** 31, **L22** 263; herb to 80 cm tall; hill forest; known only from Penang Hill; endemic.

248.11.1b **Globba albiflora** Ridl. var. **aurea** Holttum, **H41** 32, **L22** 263; herb to 80 cm tall; forest on limestone; known only from Gua Lambok, Kl; endemic.

248.11.2a **Globba cernua** Baker ssp. **cernua**, **FMP4** 240, **H41** 32, **L22** 249; *Globba macranthera* Ridl., **FMP4** 240; *Globba brachycarpa* Baker, **FMP4** 240; herb about 70 cm tall; lowland and hill forest; common on the Main Range; endemic species.

248.11.2b **Globba cernua** Baker ssp. **crocea** S.N. Lim, **L22** 250; herb; lowland forest; known only from Jenka, Ph; endemic subspecies.

248.11.2c **Globba cernua** Baker ssp. **porphyria** S.N. Lim, **L22** 251; herb; on shaded rocks in hill forest at about 400 m; only known from Bujang Melaka, Pk; endemic subspecies.

248.11.3 **Globba corneri** A. Weber, **W05** 1; *Globba unifolia* Ridl. var. *sessiliflora* Holttum, **H41** 34, **L22** 252; herb to 30 cm tall; lowland and hill forest; ?Kl, Tg; endemic.

248.11.4 **Globba curtisii** Holttum, **H41** 35, **L22** 254; herb about 60 cm tall; damp spots in hill forest at 600–1200 m, often near streams; Ph, Sl; endemic.

248.11.5 **Globba fasciata** Ridl., **FMP4** 236, **H41** 28, **L22** 263, **C16** 74; herb to 1 m tall; on limestone; Ph, Kl; endemic.

248.11.6 **Globba fragilis** S.N. Lim, **L22** 252, **C16** 74; tufted herb to 50 cm tall; near shaded lowland forest stream; only known from type; P. Langkawi; endemic.

248.11.7a **Globba holttumii** S.N. Lim ssp. **aurea** S.N. Lim, **L22** 257; herb to about 70 cm tall; lowland and hill forest; Sl, Jh; endemic species.

248.11.7b **Globba holttumii** S.N. Lim ssp. **holttumii**, **L22** 255; herb to about 70 cm tall; near streams in hill forest at 600–1200 m; Ph, Sl; endemic species.

248.11.8 **Globba x intermedia** S.N. Lim, **L22** 257; herb to 1 m tall; damp shady places in montane forest at 1300–1500 m; Ph, NS; endemic hybrid.

248.11.9a **Globba leucantha** Miq. var. **bicolor** Holttum, **H41** 27, **L22** 268; *Globba regalis* Ridl., **FMP4** 237; herb to 1 m tall; lowland and hill forests; Kl, Tg, Ph.

248.11.9b **Globba leucantha** Miq. var. **flavidula** (Ridl.) Holttum, **H41** 28, **L22** 268; *Globba flavidula* Ridl., **FMP45** 338; herb to 1 m tall; known only from type; Ulu Sg Merapoh, Ph; endemic variety.

248.11.9c **Globba leucantha** Miq. var. **peninsularis** Holttum, **L22** 267; *Globba leucantha* Miq., **FMP4** 238, **H41** 26; herb to 1 m tall; lowland forest; Tg & Pk southward; endemic variety.

248.11.9d **Globba leucantha** Miq. var. **violacea** (Ridl.) Holttum, **H41** 27, **L22** 268; *Globba violacea* Ridl., **FMP4** 239; herb to 1 m tall; lowland and hill forest; Pk southward; endemic variety.

248.11.10 **Globba marantina** L., **FMP4** 241, **H41** 25, **L22** 247; herb to 50 cm tall, rarely flowering; open dry lowland sites; north of Peninsula and east coast.

248.11.11 **Globba nawawii** H. Ibrahim & K. Larsen, **I01** 157; herb to 40 cm tall; riverbank in lowland forest; Sg Pertang, Hulu Dugun, Tg; endemic.

248.11.12a **Globba patens** Miq. var. **costulata** S.N. Lim, **L22** 260; herb about 60 cm tall; lowland and hill forest; Ph, Sl; endemic variety.

248.11.12b **Globba patens** Miq. var. **patens**, **L22** 259; *Globba aurantiaca* (*non* Miq.) K. Schum., **FMP4** 239, **H41** 36; herb to about 60 cm tall; lowland and hill forest; Pn southwards to Jh.

248.11.13a **Globba pendula** Roxb. ssp. **montana** (Ridl.) S.N. Lim, **L22** 266; *Globba montana* Ridl., **FMP4** 236; herb to 1 m tall; lowland and hill forest; Kd, Pg; endemic subspecies.

248.11.13b **Globba pendula** Roxb. ssp. **pendula** var. **elegans** (Ridl.) Holttum, **H41** 29, **L22** 265; *Globba elegans* Ridl., **FMP4** 237; herb to 1 m tall; damp shady places; Pk, Ph; endemic variety.

248.11.13c **Globba pendula** Roxb. ssp. **pendula** var. **pendula**, **FMP4** 236 (as *Globba pendula*), **H41** 29, **L22** 264; *Globba panicoides* Miq., **FMP4** 235; *Globba uliginosa* Miq., **FMP4** 235; *Globba valida* Ridl., **FMP4** 236; *Globba wallichii* Baker, **FMP4** 235; herb to 1 m tall; lowland and hill forests to 1200 m under deep damp shade; common throughout.

248.11.14b **Globba unifolia** Ridl., **FMP4** 240, **H41** 33, **L22** 252; herb to 30 cm tall; lowland and montane forest; Kl, Tg; endemic species.

248.11.15a **Globba variabilis** Ridl. ssp. **pusilla** S.N. Lim, **L22** 261; herb to 30 cm tall; lowland and hill forest; Jh; endemic.

248.11.15b **Globba variabilis** Ridl. ssp. **variabilis**, **FMP4** 239, **H41** 37, **L22** 261; *Globba malaccensis* Ridl., **FMP4** 237; *Globba perakensis* Ridl., **FMP4** 239; herb to 50 cm tall; damp shady places in lowland and hill forest; Pk southward; endemic.

248.12.1 **Haniffia cyanescens** (Ridl.) Holttum, **H41** 124; *Kaempferia cyanescens* (Ridl.) Ridl., **FMP4** 246; herb to 80 cm tall; montane forest; Kd, NS.

248.13.1 **Hedychium chrysoleucum** Hook., **H41** 74; herb about 1 m tall; Kl, Pg; possibly escapes from cultivation.

248.13.2 **Hedychium collinum** Ridl., **FMP4** 241, **H41** 75; herb about 1 m tall; rocky places in montane forest at about 1300 m; Kd, Ph; endemic.

248.13.3 **Hedychium hirsutissimum** Holttum, **H41** 76; herb possibly epiphytic; montane forest 1200 m; only known from type; Taiping Hill, Pk; endemic.

248.13.4 **Hedychium longicornutum** Baker, **FMP4** 242, **H41** 77; herbaceous epiphyte about 60 cm tall; low down on trees in lowland and hill forest; throughout except Sp.

248.13.5 **Hedychium macrorrhizum** Ridl., **FMP4** 242, **H41** 76; herbaceous epiphyte; on tall trees; only known from type; Semangkok Pass, Sl; endemic.

248.13.6 **Hedychium malayanum** Ridl., **FMP4** 241, **H41** 75; herb; montane forest at 1200–1500 m; Ph; endemic.

248.13.7 **Hedychium paludosum** M.R. Hend., **H41** 77; herb to 1.5 m tall; *Sphagnum* bogs in the mountains at about 1500 m; Cameron Highlands, Ph; endemic.

248.14.1 **Hornstedtia conica** Ridl., **FMP4** 268, **H41** 175; herb 2–3 m tall; lowland and hill forest; Tg, Sl, Jh, Sp; ? endemic.

248.14.2 **Hornstedtia leonurus** (J. König) Retz., **FMP4** 269, **H41** 177; herb to 5 m tall; lowland forest; Ph, Ml, Jh, Sp; endemic.

248.14.3 **Hornstedtia ophiuchus** (Ridl.) Ridl., **FMP4** 268, **H41** 176; herb to 4 m tall; lowland forest; known only from type; Sg Tahan, Ph; endemic.

248.14.4 **Hornstedtia phaeocoana** (K. Schum.) K. Schum., **H41** 174; herb to 2 m tall or more; lowland forest; once collected at Sg Sedili, Jh.

248.14.5 **Hornstedtia pusilla** Ridl., **FMP4** 269, **H41** 174; herb about 40 cm tall; lowland forest; known only from type; Kuala Tembeling, Ph; endemic.

248.14.6a **Hornstedtia scyphifera** (J. König) Steud. var. **fusiformis** Holttum, **H41** 171; stilt-rooted herb 2–3 m tall; lowland forest; Kl, Tg, Sl; endemic variety.

248.14.6b **Hornstedtia scyphifera** (J. König) Steud. var. **grandis** (Ridl.) Holttum, **H41** 172; *Hornstedtia grandis* Ridl., **FMP4** 268; stilt-rooted herb about 3 m tall; montane forest at about 1200 m; Pk, Ph.

248.14.6c **Hornstedtia scyphifera** (J. König) Steud. var. **scyphifera**, **H41** 170; *Hornstedtia scyphus* Retz., **FMP4** 267; herb 2–5 m tall; lowland and montane forest to 1100 m; Tg, Ph, Sl, Jh, Sp.

248.14.7 **Hornstedtia striolata** Ridl., **FMP4** 268, **H41** 173; herb; montane forest; known only from type; Ulu Semangkok, Sl; endemic.

248.15.1 **Kaempferia elegans** (Wall.) Baker, **FMP4** 245, **H41** 123; few-leaved herb; on limestone rocks; Kd, P. Langkawi.

248.15.2 **Kaempferia pulchra** (Ridl.) Ridl., **FMP4** 245, **H41** 122; small flat few-leaved herb; on limestone rocks; P. Langkawi.

248.16.1 **Plagiostachys albiflora** Ridl., **FMP4** 273, **H41** 164; herb to 2 m tall (Ridl); moist lowland forest; Tg, Pk, Jh; endemic.

248.16.2 **Plagiostachys lateralis** Ridl., **FMP4** 273, **H41** 161; herb about 2 m tall; lowland forest; Ph, Jh, Sp; endemic.

248.16.3 **Plagiostachys mucida** Holttum, **H41** 162; herb to 3 m tall; wet lowland forest; Kl, Pk, Sl, NS, Ml, Jh, Sp; endemic.

248.17.1 **Scaphochlamys atroviridis** Holttum, **H41** 93; herb about 25 cm tall; lowland forest; Tg, Ml; endemic.

248.17.2a **Scaphochlamys biloba** (Ridl.) Holttum var. **biloba**, **H41** 89; *Gastrochilus bilobus* Ridl., **FMP4** 251; creeping herb about 30 cm tall; shady lowland forest; Kl, Ph; endemic.

248.17.2b **Scaphochlamys biloba** (Ridl.) Holttum var. **lanceolata** (Ridl.) Holttum, **H41** 90; *Gastrochilus minor* (*non* Baker) Ridl., **FMP4** 252; creeping herb about 30 cm tall; shady lowland forest; Pk; endemic.

248.17.3 **Scaphochlamys breviscapa** Holttum, **H41** 95; creeping herb to 20 cm tall; hill forest; only known from type; Ulu Bendong, Tg; endemic.

248.17.4 **Scaphochlamys burkillii** Holttum, **H41** 102; stilt-rooted herb to 30 cm tall; lowland forest; Ph; endemic.

248.17.5 **Scaphochlamys concinna** (Baker) Holttum, **H41** 94; *Gastrochilus concinnus* (Baker) Ridl., **FMP4** 251; creeping herb to 20 cm tall; only known from type; Ulu Bubong, Pk; endemic.

248.17.6 **Scaphochlamys erecta** Holttum, **H41** 99; herb to 60 cm tall; in thick litter of lowland forest; only known from Sg Sedili, Jh; endemic.

248.17.7 **Scaphochlamys grandis** Holttum, **H41** 101; stilt-rooted herb about 1 m tall; swampy lowland forest; only known from type locality; Ulu Bendong, Tg; endemic.

248.17.8a **Scaphochlamys klossii** (Ridl.) Holttum var. **glomerata** Holttum, **H41** 101; creeping herb; lowland forest; only known from Gg Panti, Jh; endemic species and variety.

248.17.8b **Scaphochlamys klossii** (Ridl.) Holttum var. **klossii**, **H41** 100; *Gastrochilus klossii* Ridl., **FMP4** 248; creeping herb; lowland forest; only known from S.E. Jh; endemic.

248.17.8c **Scaphochlamys klossii** (Ridl.) Holttum var. **minor** Holttum, **H41** 101; creeping herb; lowland and hill forest; only known from S.E. Jh; endemic.

248.17.9a **Scaphochlamys kunstleri** (Baker) Holttum var. **kunstleri**, **H41** 96; *Hitcheniopsis kunstleri* (Baker) Ridl., **FMP4** 252; creeping herb about 20 cm tall; lowland and hill forest; Pk; endemic.

248.17.9b **Scaphochlamys kunstleri** (Baker) Holttum var. **rubra** (Ridl.) Holttum, **H41** 97; *Hitcheniopsis kunstleri* (Baker) Ridl. var. *rubra* Ridl., **FMP4** 253; creeping herb; lowland forest; Pk; endemic.

248.17.10 **Scaphochlamys lanceolata** (Ridl.) Holttum, **H41** 99; *Gastrochilus lanceolatus* Ridl., **FMP4** 250; creeping herb to about 15 cm tall; lowland forest; known only from type; Gg Panti, Jh; endemic.

248.17.11 **Scaphochlamys longifolia** (Ridl.) Holttum, **H41** 91; *Gastrochilus longifolius* Ridl., **FMP4** 252; creeping herb about 25 cm tall; hill forest; only known from Ulu Gombak, Sl; endemic.

248.17.12 **Scaphochlamys malaccana** Baker, **H41** 104; *Gastrochilus scaphochlamys* Ridl., **FMP4** 250; *Gastrochilus lancifolius* Ridl., **FMP4** 250; stilt-rooted herb to 20 cm tall; lowland and hill forest to 800 m; NS, Ml, Jh; endemic.

248.17.13 **Scaphochlamys oculata** (Ridl.) Holttum, **H41** 92; *Gastrochilus oculatus* Ridl., **FMP4** 251; creeping herb about 10 cm tall; hill forest at 250–500 m; Sl, Jh; endemic.

248.17.14 **Scaphochlamys pennipicta** Holttum, **H41** 93; creeping herb to 30 cm tall; montane forest at about 1200 m; known only from type; Fraser's Hill, Ph; endemic.

248.17.15 **Scaphochlamys perakensis** Holttum, **H41** 97; *Hitcheniopsis lanceolata* (Ridl.) Ridl., **FMP4** 253; creeping herb to 50 cm tall; wet spots in forest; Pk; endemic.

248.17.16 **Scaphochlamys rubromaculata** Holttum, **H41** 103; stilt-rooted herb to 30 cm tall; lowland forest at 200 m; known only from type locality; Ulu Bendong, Tg; endemic.

248.17.17 **Scaphochlamys sub-biloba** (Burkill *ex* Ridl.) Holttum, **H41** 105; *Gastrochilus sub-bilobus* Burkill *ex* Ridl., **FMP4** 250; creeping herb to about 30 cm tall; lowland and hill forest to 600 m; known only from P. Tioman, Ph; endemic.

248.17.18 **Scaphochlamys sylvestris** (Ridl.) Holttum, **H41** 91; *Hitcheniopsis sylvestris* (Ridl.) Ridl., **FMP4** 253; creeping herb about 40 cm tall; hill forest at 400–800 m; Ph; endemic.

248.17.19 **Scaphochlamys tenuis** Holttum, **H41** 98; herb to 30 cm tall; lowland forest; knwon only from type; Sg Nipa, Tg; endemic.

248.17.20 **Scaphochlamys sp.**, **H41** 89; creeping herb; lowland forest; only known from Karak F. R., Ph; endemic.

248.18.1 **Zingiber chrysostachys** Ridl., **FMP4** 260, **H41** 55; herb to 1 m tall; lowland and hill forest to 900 m; Kd, Pk; endemic.

248.18.2 **Zingiber curtisii** Holttum, **H41** 54; herb to 1 m tall; hill forest; only known from type; Gg Bujong Malacca, Pk; endemic.

248.18.3a **Zingiber gracile** Jack var. **aurantiacum** Holttum, **H41** 65; herb to 2 m tall; hill and montane forest to 1100 m; Ph, Sl, NS; endemic.

248.18.3b **Zingiber gracile** Jack var. **elatior** Ridl., **FMP4** 260, **H41** 64; herb to 1.5 m tall; hill and montane forest to 1100 m; Pn, Pk, Sl, Jh; endemic.

248.18.3c **Zingiber gracile** Jack var. **gracile**, **FMP4** 260, **H41** 63; herb to 1 m tall; lowland forest; Kd, Pn, Ph, Sl, NS, Jh; endemic.

248.18.3d **Zingiber gracile** Jack var. **petiolatum** Holttum, **H41** 64; herb to 2.5 m tall; lowland forest to 300 m; Kd, Ph, Sl; endemic.

248.18.4 **Zingiber griffithii** Baker, **FMP4** 260, **H41** 60; *Zingiber citrinum* Ridl., **FMP4** 260; herb to 70 cm tall; lowland forest; common in south of the Peninsula.

248.18.5 **Zingiber kunstleri** King, **FMP4** 258, **H41** 52; herb to 2 m tall; lowland and hill forest; Tg, Pk, Ph; endemic.

248.18.6a **Zingiber multibracteatum** Holttum var. **multibracteatum**, **H41** 57; herb to 3 m tall; montane forest about 1200 m; Ph; endemic.

248.18.6b **Zingiber multibracteatum** Holttum var. **viride** Holttum, **H41** 58; herb to 3 m tall; montane forest about 1200 m; known only from type; Tanah Rata, Ph; endemic.

248.18.7a **Zingiber puberulum** Ridl. var. **chryseum** (Ridl.) Holttum, **H41** 62; *Zingiber chryseum* Ridl., **FMP4** 260; herb to 3 m tall; damp lowland forest; Jh, Sp; endemic variety.

248.18.7b **Zingiber puberulum** Ridl. var. **ovoideum** Holttum, **H41** 63; herb 1–3 m tall; lowland forest; Kl, Pk, Ph; endemic variety.

248.18.7c **Zingiber puberulum** Ridl. var. **puberulum**, **FMP4** 261, **H41** 61; *Zingiber griffithii* Baker var. *major* Ridl., **FMP4** 261; herb 1–3 m tall; lowland forests; common in south; Kl, Tg, Pn, Pk, Ph, Sl, Sp; endemic variety.

248.18.8 **Zingiber spectabile** Griff., **FMP4** 258, **H41** 56; herb about 2 m tall; lowland forests; NS northward.

248.18.9 **Zingiber sulphureum** Burkill *ex* I. Theilade, Curtis's Bot. Mag. 12 (1995) 75; herb to 0.7 m tall; lowland forest on limestone or granite; Ph; endemic.

248.18.10 **Zingiber wrayi** Prain *ex* Ridl., **FMP4** 259, **H41** 53; herb to 2 m tall; lowland forest; Tg, Pk, Ph, Jh; endemic.